⚙ Overview: Rural Energy and Electromechanical Components

This document appears to be a multilingual, modular technical draft combining schematic diagrams, component tables, and control logic for rural energy systems and electromechanical modules. It blends French, English, and symbolic notation, suggesting it's part of a bilingual curriculum or archival framework.

□ Key Themes and Components

1. Circuitry and Control Systems

- **RCL Phase Circuits** and RMS/AV.MAS indicators
- **Diac/Triac switching** and intercom systems using surplus equipment
- **Bridge rectifier logic** with Kirchhoff’s law applications
- **Control panel wiring**: single-phase, three-phase, and switch comparisons (SW1–SW7)

2. Energy and Power Modules

- **Battery accumulators**, capacitors, condensators, and resistors
- **Voltage specs**: 12V, 250V, 400V, microfarads, and filtration MHz
- **DC motor operation**: starter plates, armature reaction, sparking mitigation

3. Material and Component Tables

- Extensive tabular data on:
  - Wire cabling, isolators, emitters, detectors
  - Dielectric, magnetic, and electromechanical properties
  - Size specs (e.g., 14cmL, 22cm, 1cm x 20cm)
  - System processes, control balance, and telematic networks

4. Signal and Data Flow

- **Impulse reception and transfer circuits**
- **Indicators for routing and connection rights**
- **Binary synchronization and registrar logic**

5. Security and Policy Logic

- **Alarm systems**, overload control, and transistor-based regulation
- **Policy control modules**: saturation, comparator, traffic robot logic

- **Safeguard and protection devices** (SABS, EIC references)

□ Educational and Archival Notes

- References to **ST PEACE COLLEGE** and **Belus Electrical Trade Theory NI (May 2021)** suggest this is part of a vocational or trade curriculum.
- The document includes **hand-drawn schematics**, **symbolic logic**, and **multilingual annotations**, aligning with your modular, museum-grade documentation style.
- Several figures and tables are placeholders or partially corrupted, indicating this is a working draft or scanned archival input.

Would you like help scaffolding this into a bilingual curriculum module, credential-linked dashboard, or export logic for GitLab/archive.org? I can also help extract clean tables, generate Visual Basic logic, or map this into your banking automation framewor

Thanks for uploading the third document, Tshingombe. Here's a synthesis of its key themes and how they align with your modular curriculum and banking automation goals:

⚙ Engineering Rural Note: Hydraulic and Energy Systems

This document blends electromechanical, metallurgical, and control system logic across rural energy applications. It includes schematic fragments, component tables, and control diagrams—ideal for modular export, credential tracking, and bilingual curriculum scaffolding.

□ Key Technical Domains

1. Electromechanical & Metallurgical Processes

- **Mining and refining**: gold, platinum, ceramic, plastic, alloy molding
- **Foundry operations**: pit furnace, coke ore, casting, stamping, filtering
- **Component flow**: jaw crusher → roaster → converter → roll crusher → separator

2. Control Logic & Circuit Design

- **Sensor-driven control**: microcontroller, UV, WCC, logic gates
- **Boolean logic**: Z = (A + B) + A + (C D)
- **Resistor networks**: 120Ω, 1kΩ, 12kΩ, 330kΩ; voltage levels 0.32V–5V
- **Soldering temperature control unit**: alarm, max load, button logic (C-1, D-1)

3. Power Distribution & Safety

- **MV metering and feeder protection**: circuit breakers, open points, earthing
- **Thermal withstand curves**: 1.05 to 1.20 nominal
- **Substation architecture**: 2×16000kVA, 1×1630kV, vertical plate electrode R=0.8

4. Material and Component Tables

- **Cable die points**, tensile force, electrical polarity
- **Resistor arrays**: R1–R5, 15Ω–220Ω
- **Output logic**: pin mappings, program control cylinder

□ Curriculum Integration Opportunities

This document is rich with modular logic for:

- **Hydraulic and electromechanical curriculum units**
- **Credential-linked dashboards for mining, energy, and control systems**
- **Visual Basic export logic for sensor arrays, alarm triggers, and load control**
- **Audit-ready diagrams for soldering, feeder protection, and substation layout**

Would you like help scaffolding this into a bilingual curriculum module, Visual Basic logic, or credential-linked export sheet for GitLab or

Thanks for uploading the fourth document, Tshingombe. This one is dense and ambitious—it's a sprawling modular assessment framework for rural energy systems, blending engineering, mathematics, regulatory logic, and vocational outcomes. Here's a synthesis:

⚙ Total Assessment Framework: Energetical Rural Systems

This document outlines a bilingual, multi-domain curriculum and assessment logic for rural energy systems. It integrates technical, regulatory, and educational components into a modular framework suitable for credential tracking, export logic, and career progression.

□ Key Domains and Structures

1. Energetical System Types

- **Complex, Real, Imaginary**: used as classification logic across modules
- **Load, Transmission, Substation, Distribution, Fault Inspection**: mapped to rural infrastructure
- **Single-phase and Three-phase balance rate**: with tabular breakdowns for VL1, VL2, VL3, and power supply values

2. Curriculum and Assessment Logic

- **Module completion tracking**: weekly breakdowns, % completion, statistical reporting
- **Outcome mapping**: entry, exit, career field, vocational logic
- **Mathematics and engineering integration**: algebraic, binary, logarithmic, and psychometric logic

3. Technical Calculations and Examples

- **Temperature-resistance calculations**: copper coil resistance at various temperatures
- **Power, voltage, current, resistance**: heater, lamp, filament, and cell examples

- **Kirchhoff’s law, EMF, internal resistance**: applied to circuit diagnostics

4. Safety, Compliance, and Regulatory Logic

- **Policy patrol, applicant safety, responder logic**
- **Earth leakage, overload, interlock, short circuit protection**
- **SABS compliance, penalty logic, dismissal conditions**

5. Vocational and Policing Integration

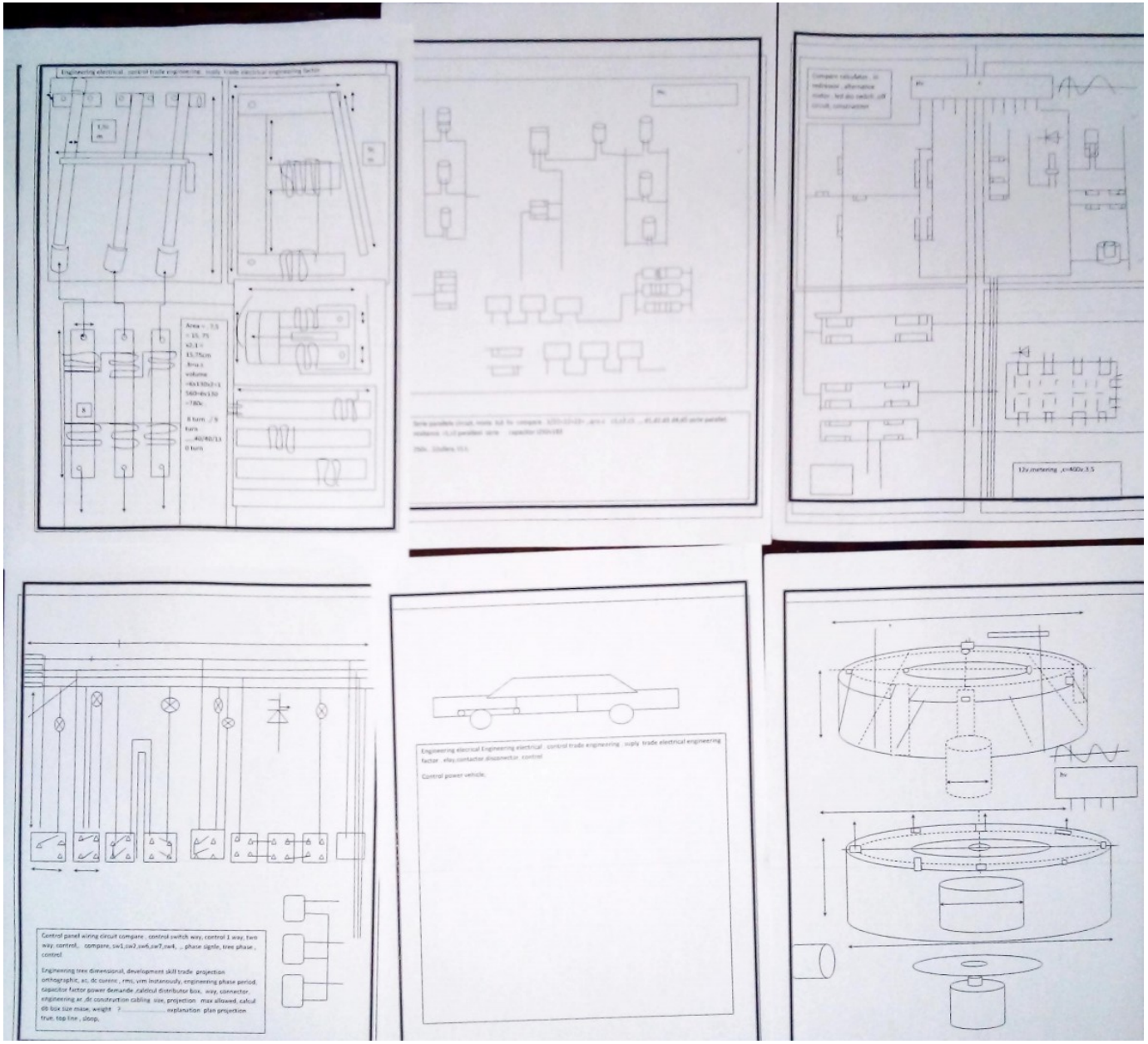
- **Crime resolution modules**: database, compliance, paralegal logic
- **Engineering-policing crossover**: crime incidence, regulatory homework, trade theory
- **Portfolio and assignment logic**: tutor feedback, learner diagnostics, didactic discipline

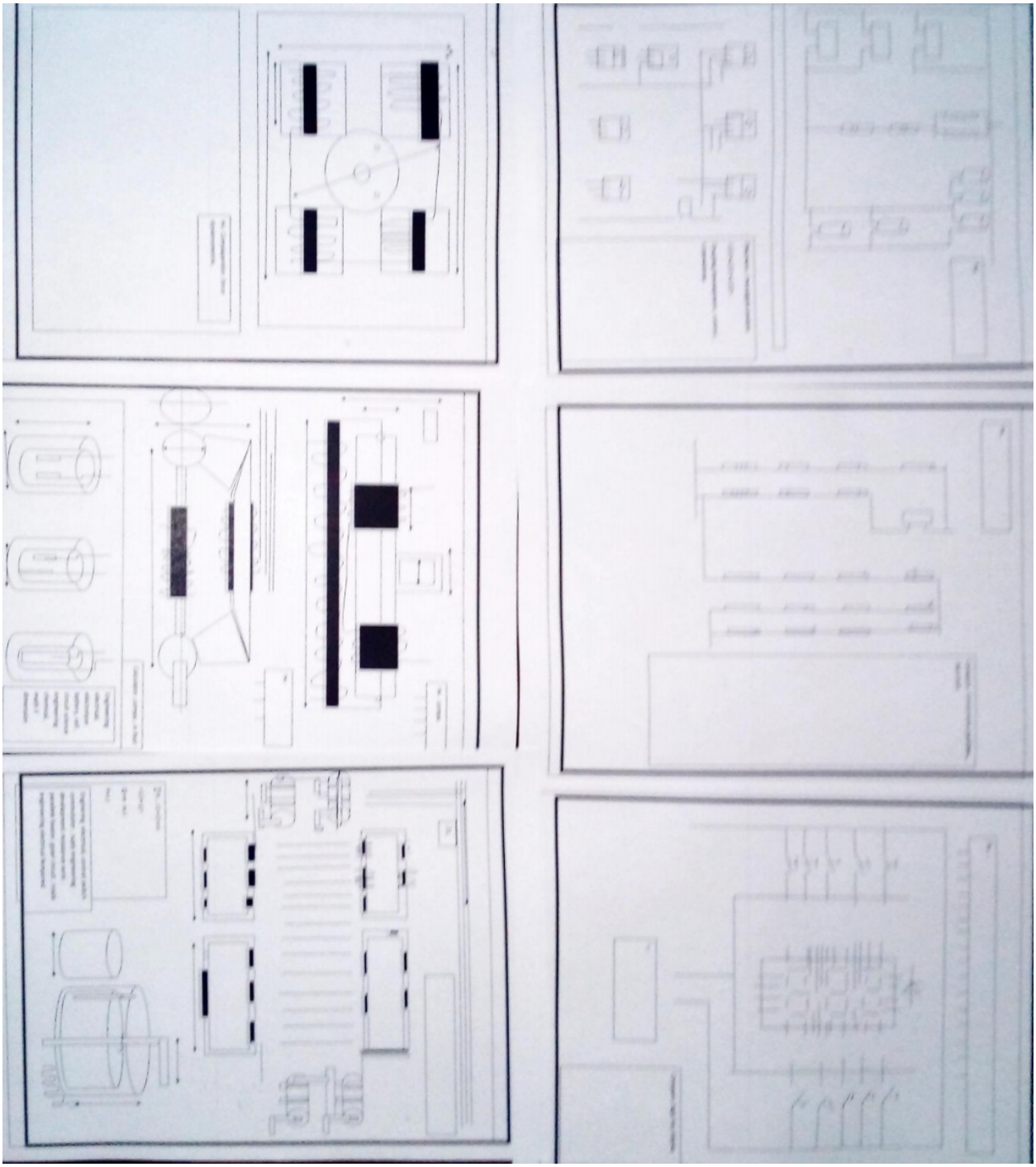
□ Integration Opportunities

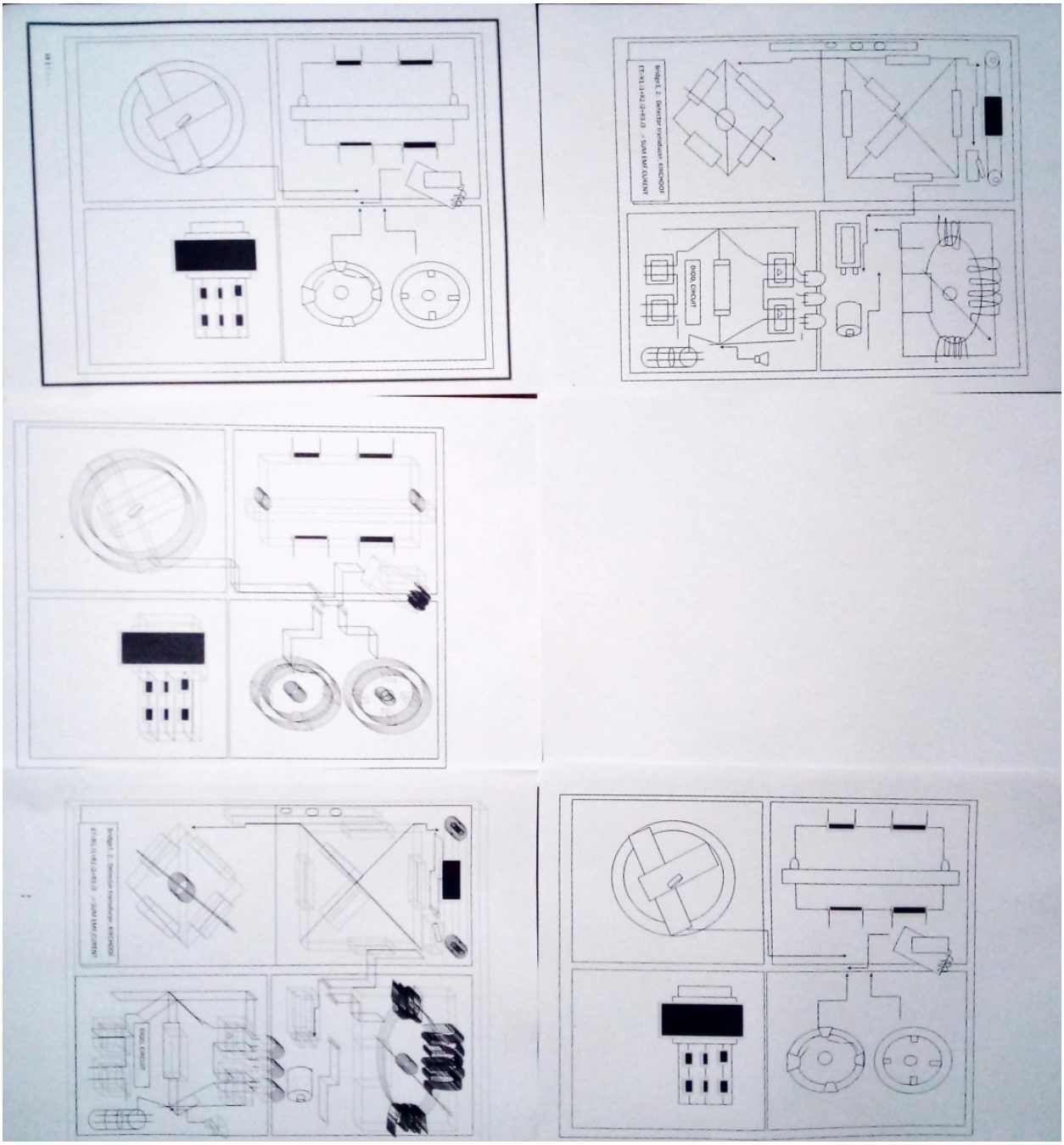
This document is ideal for:

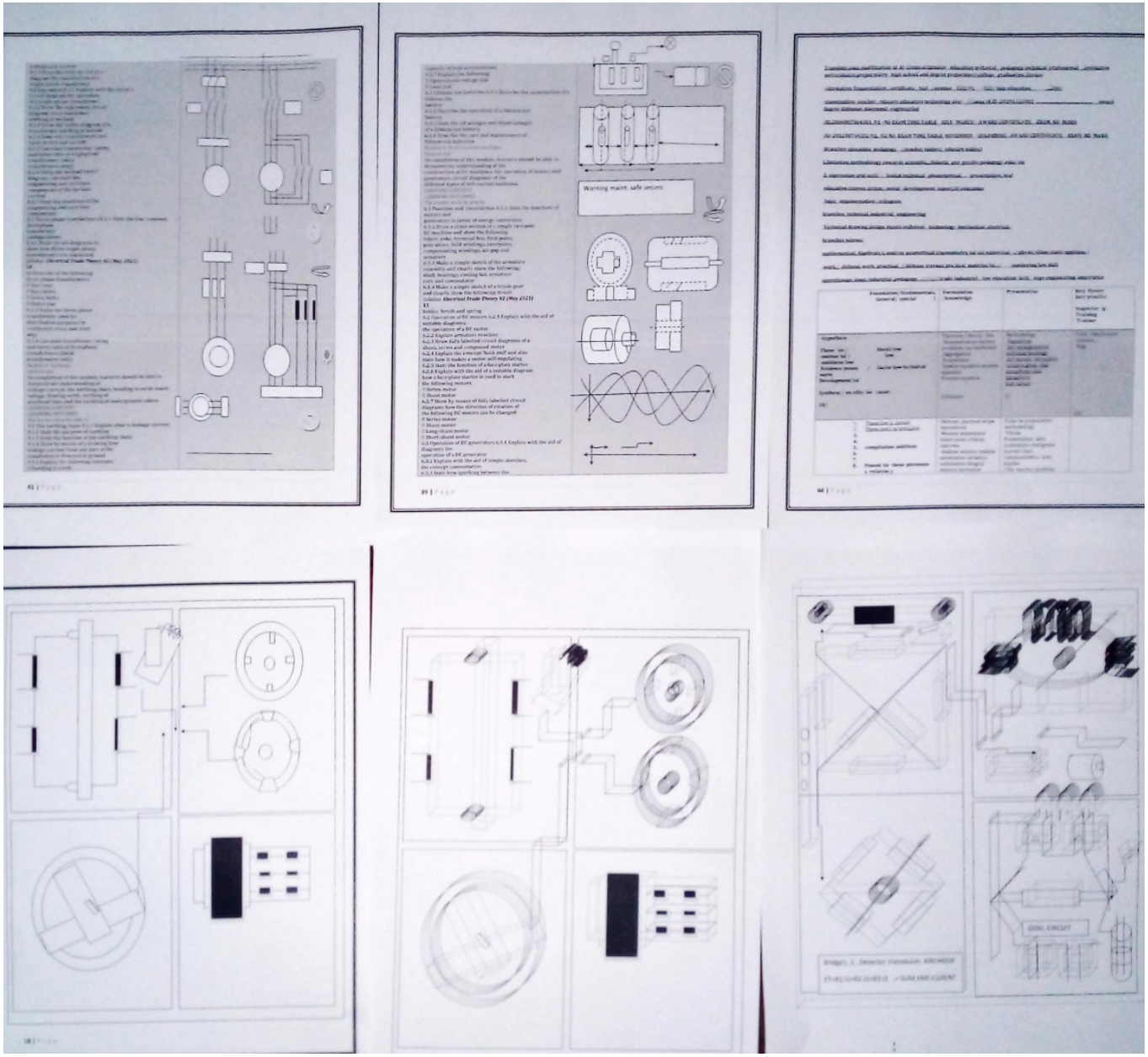
- **Credential-linked dashboards** for rural energy, compliance, and vocational training
- **Visual Basic logic scaffolding** for assessment tracking, fault inspection, and power balance
- **Modular export sheets** for GitLab/archive.org with bilingual support
- **Audit-ready curriculum frameworks** for ST PEACE COLLEGE and similar institutions

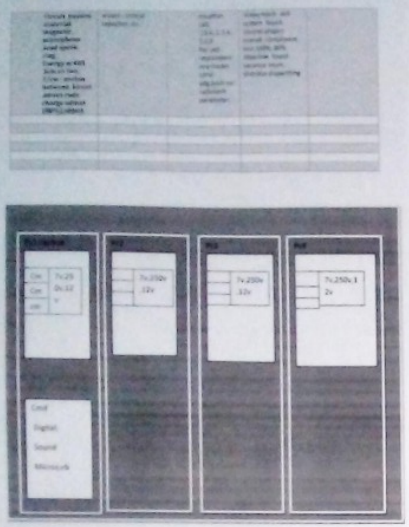
Would you like help scaffolding this into a Visual Basic-powered dashboard, credential-linked export module, or bilingual curriculum sheet? I can also help map this into your banking automation or security systems logic.

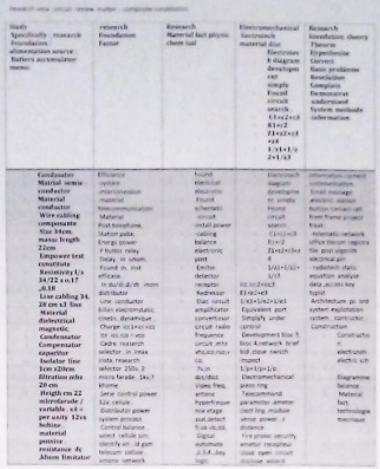


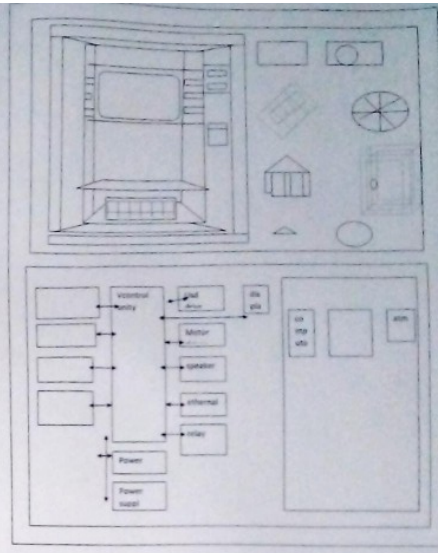


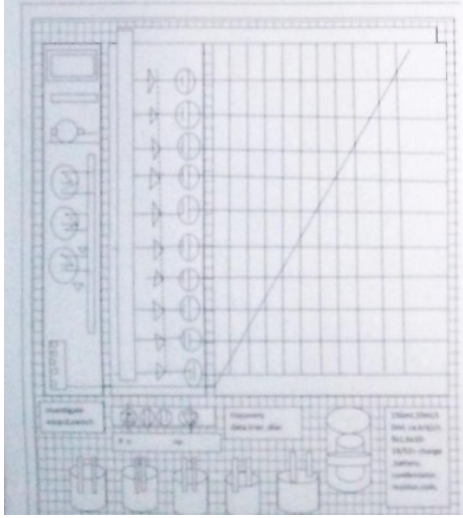

Bridge rectifier
Bridge rectifier
Bridge rectifier

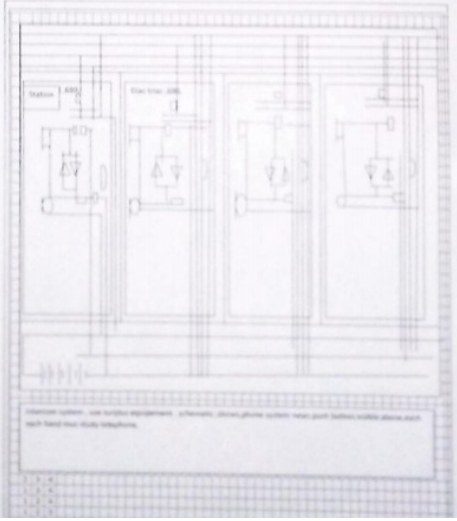


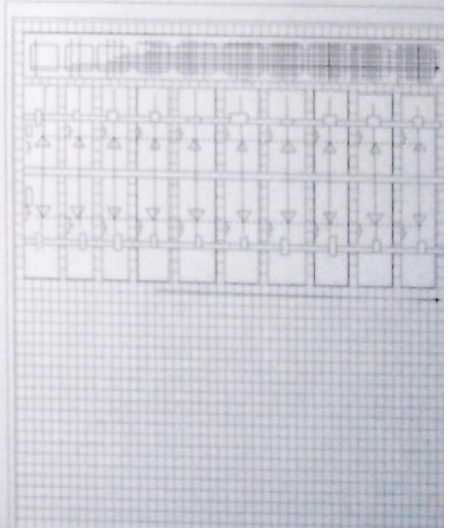


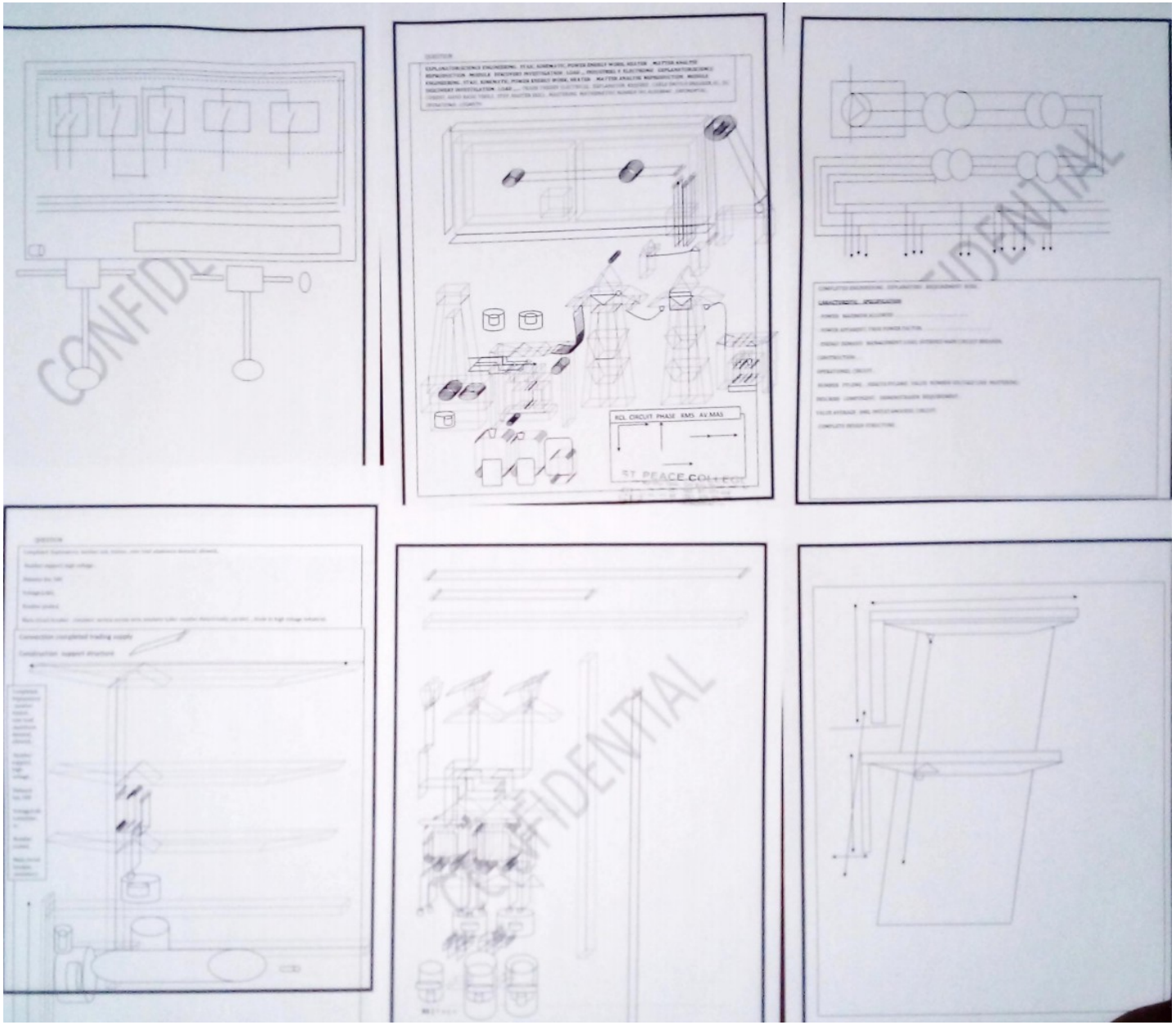


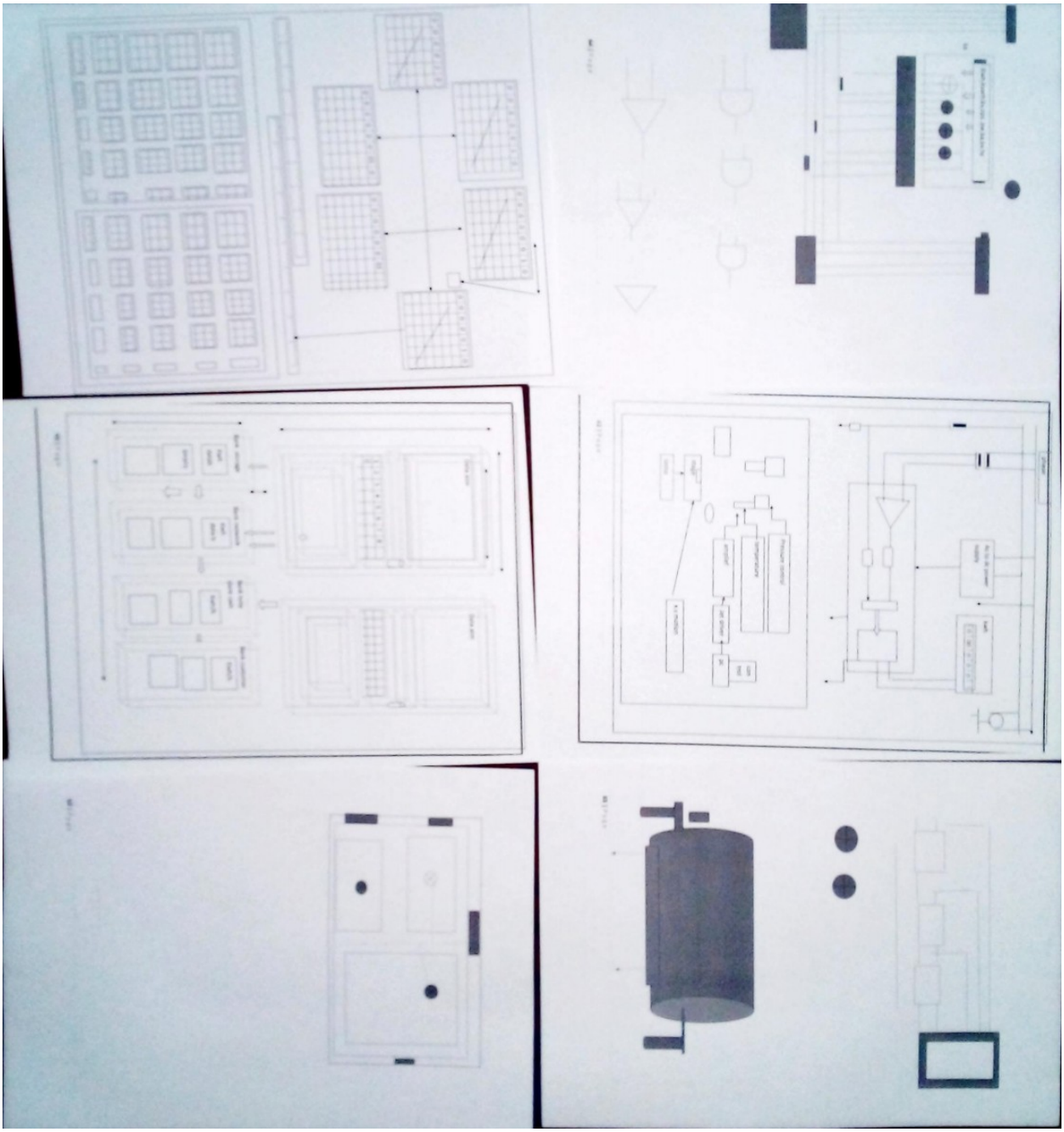

Motor
Power
Power supply

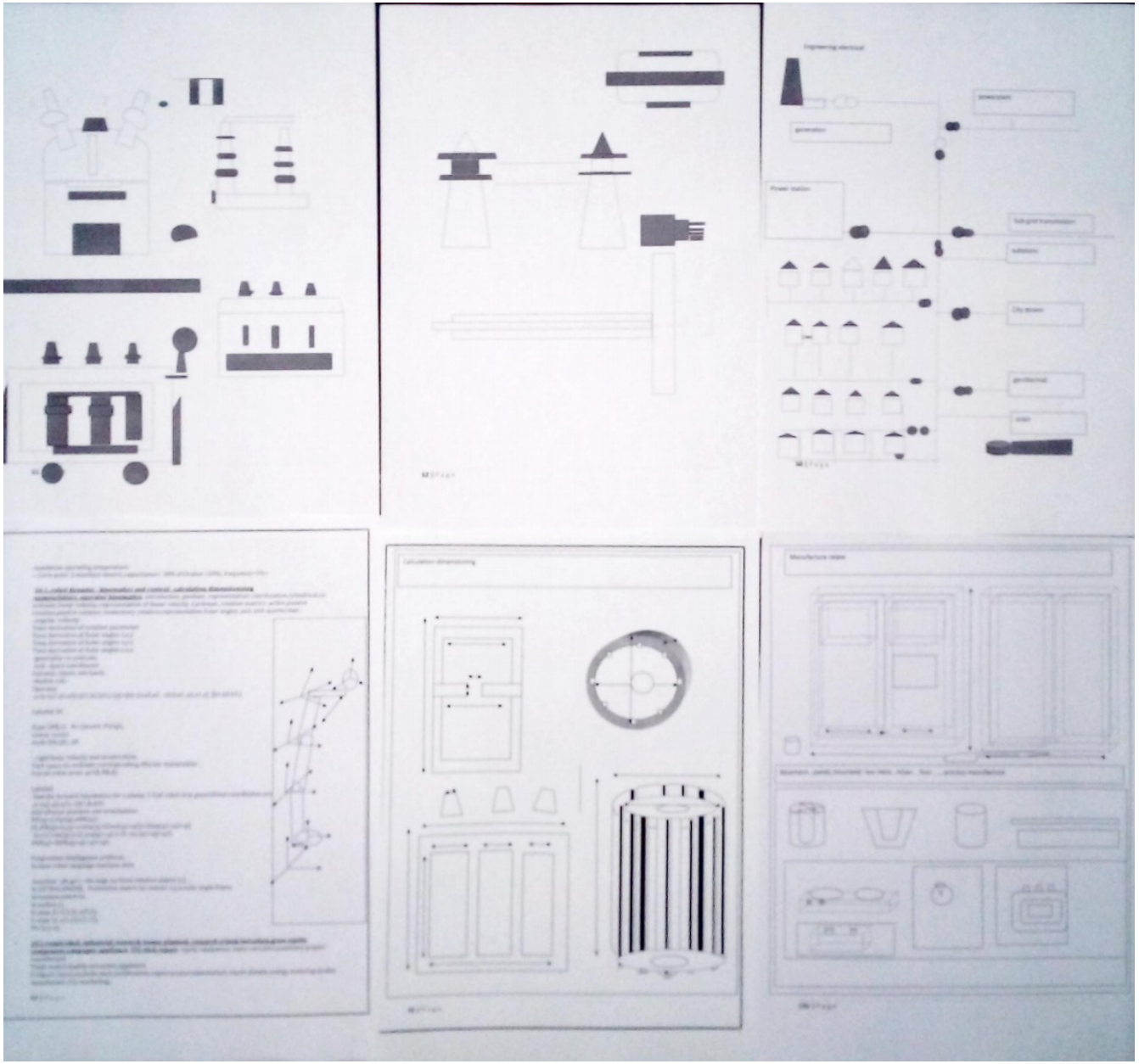


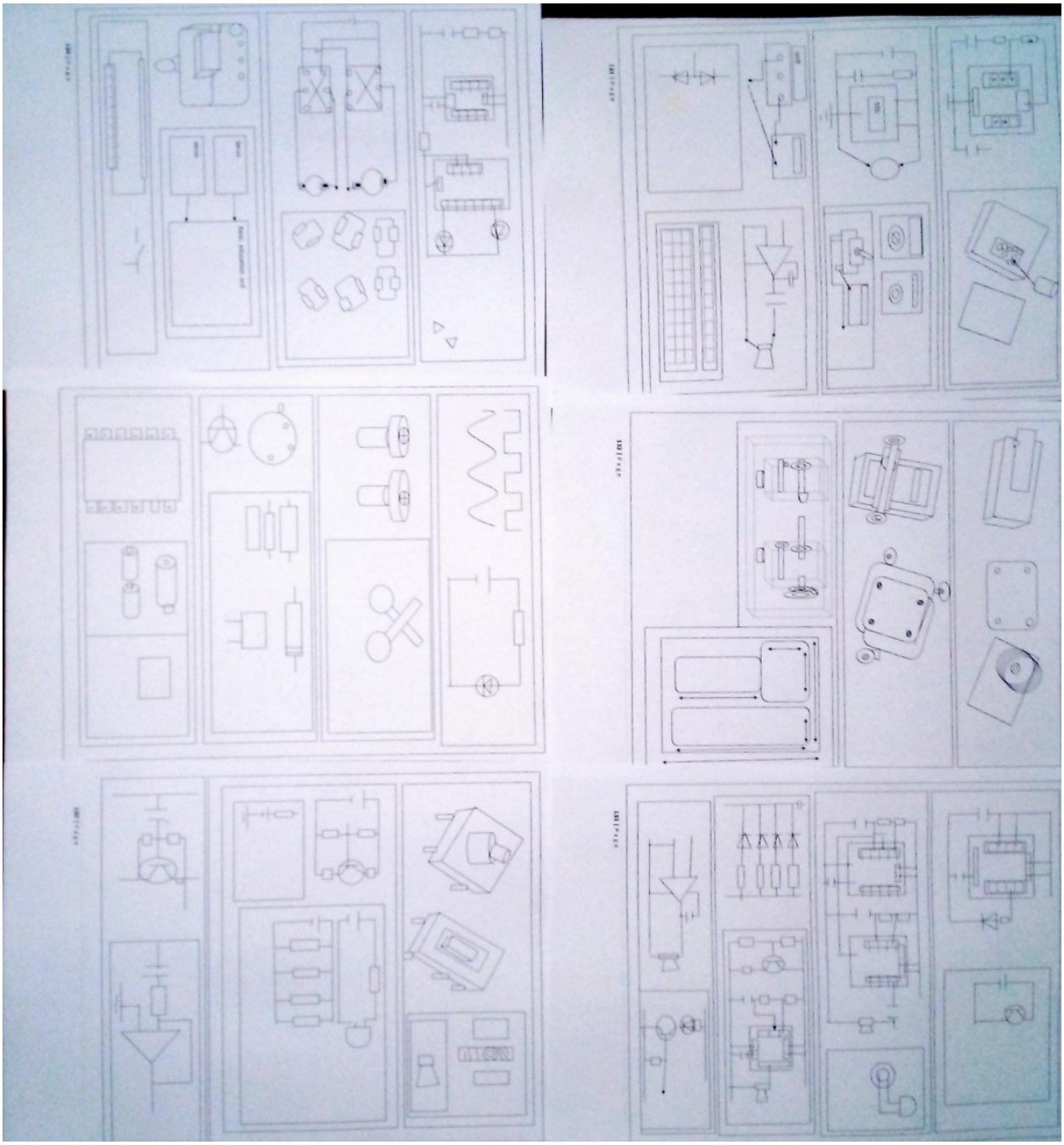





RCL CIRCUIT PHASE RMS AV MAS
ST. PEACE CO

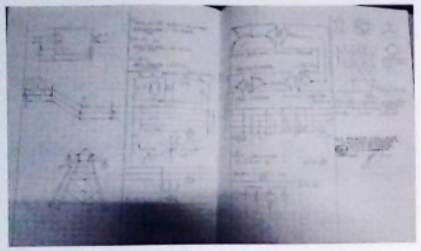


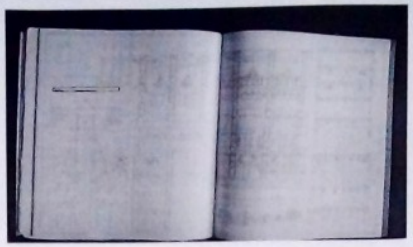


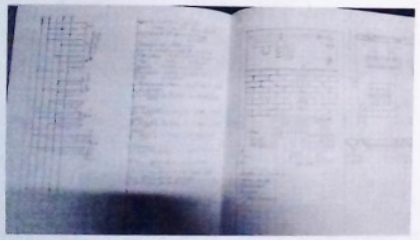


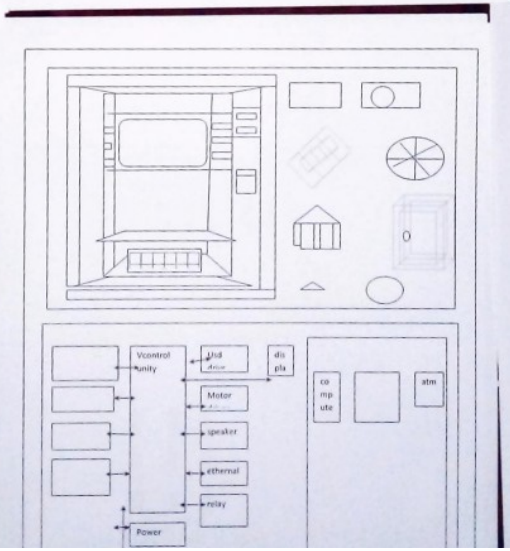
Load
Load
Fault
Receptacle
Shunt
Field
Armature

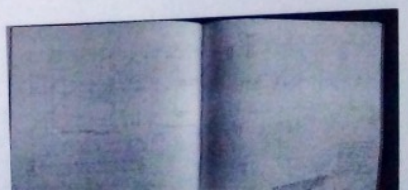
Requirement	tools instrument	Materials
Time limits set, screw	4	Push button - red, green, indicator holder, cover
Wire stripper, trimer with blade 300w, bit drill bit 6 mm, 3 mm, round nose plier, 130w, crimping tool 220w,		lug, hexagon nut, screw, washer, terminal connector, wire ferrule, cable binder, cable shapes, nylon cable
Instrument equipement, digital multimeter, megger 500, conductor 4 pcs, 18 v, 240 v,		
timer 1 numer relay		

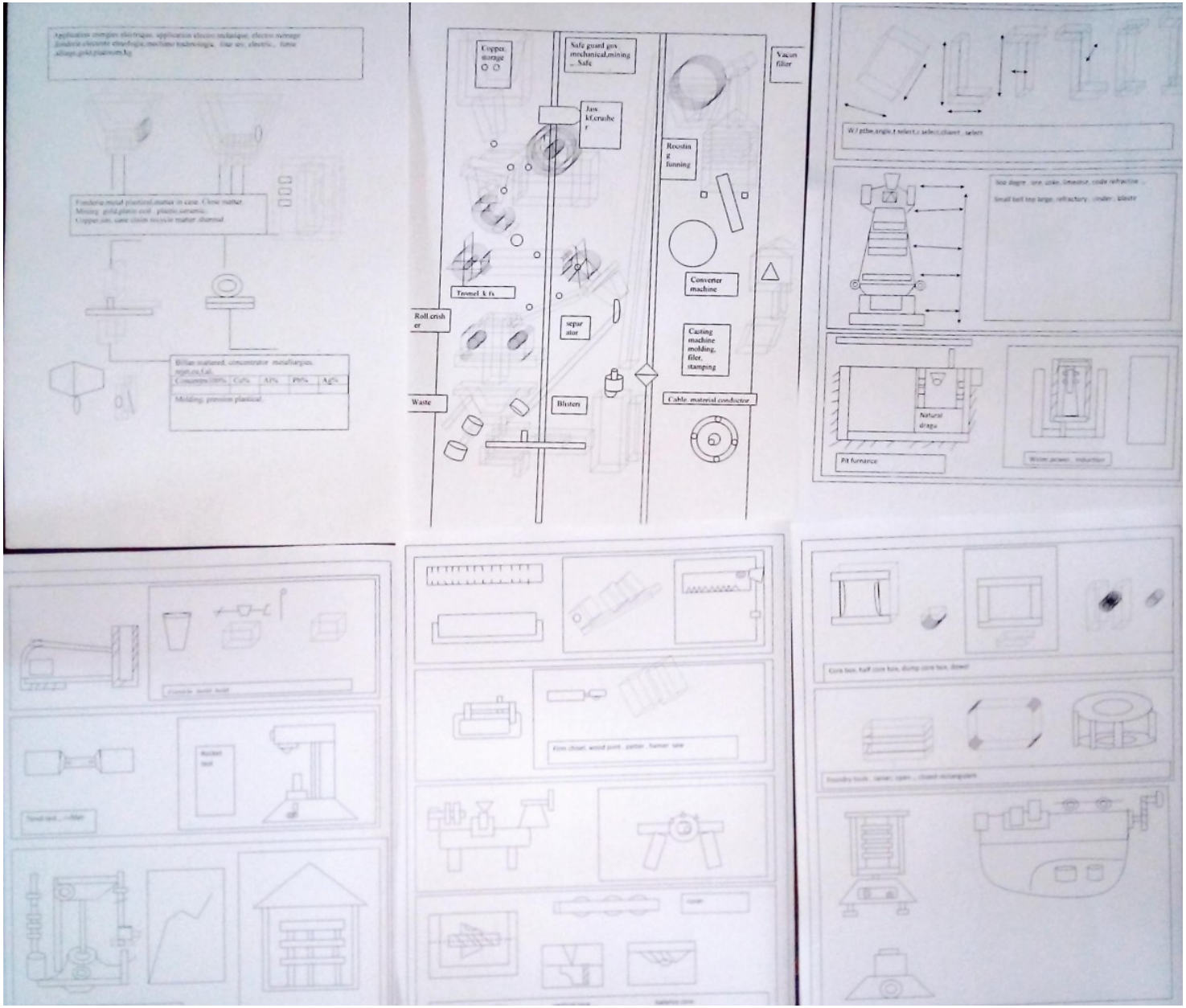


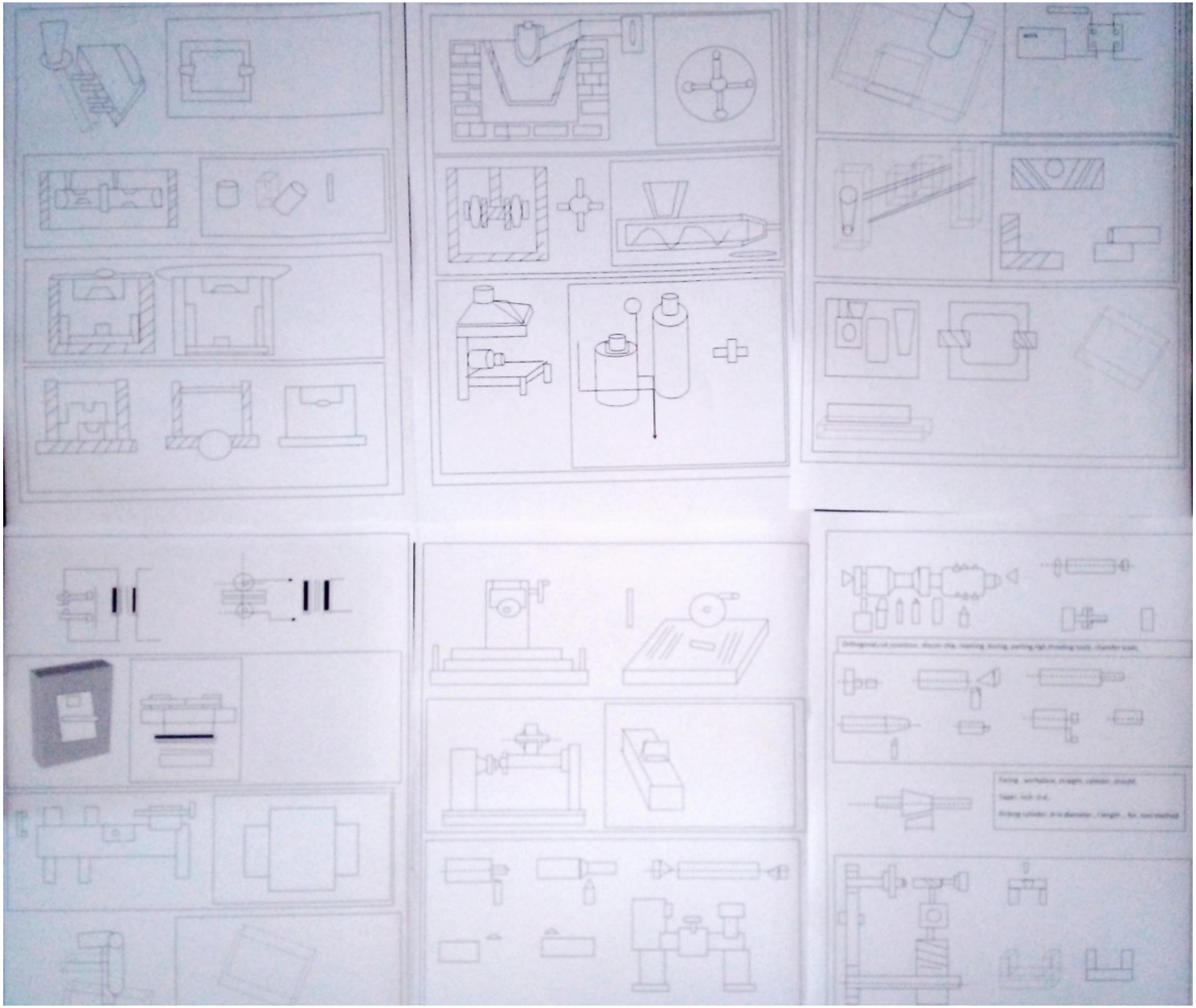


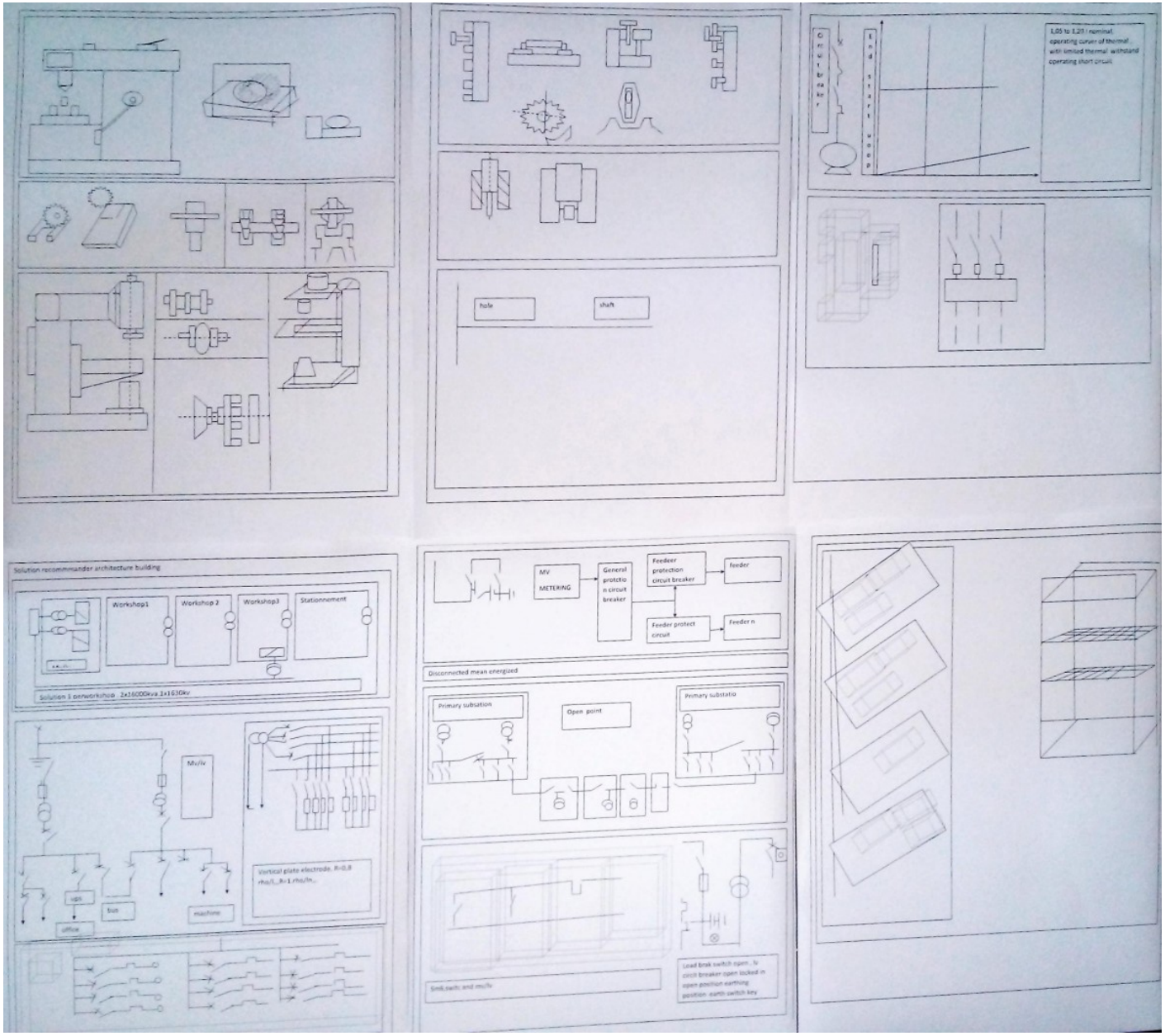


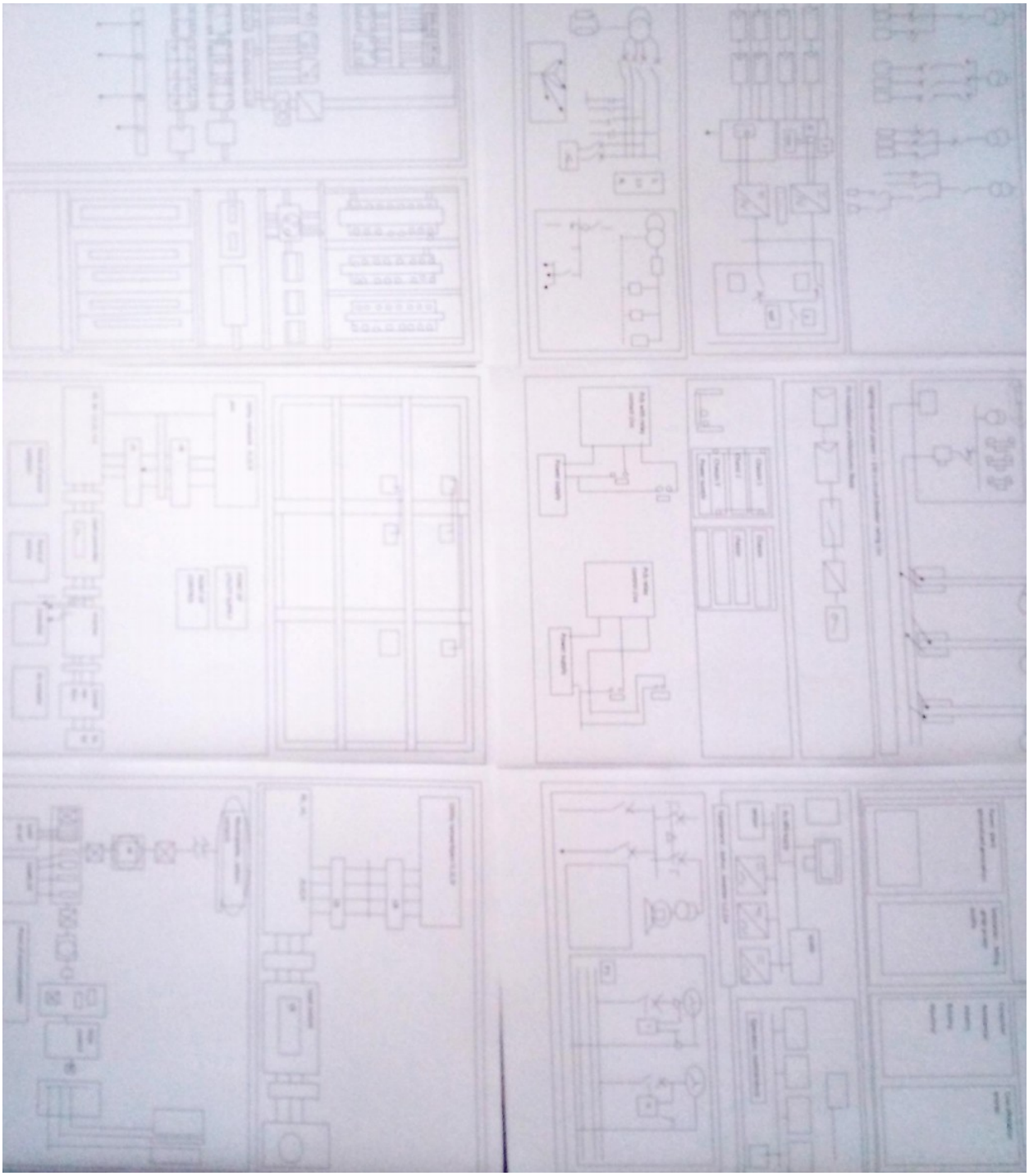

Vcontrol unity
Motor
speaker
ethernal
relay
Power
dis pla
co mp ute
atm

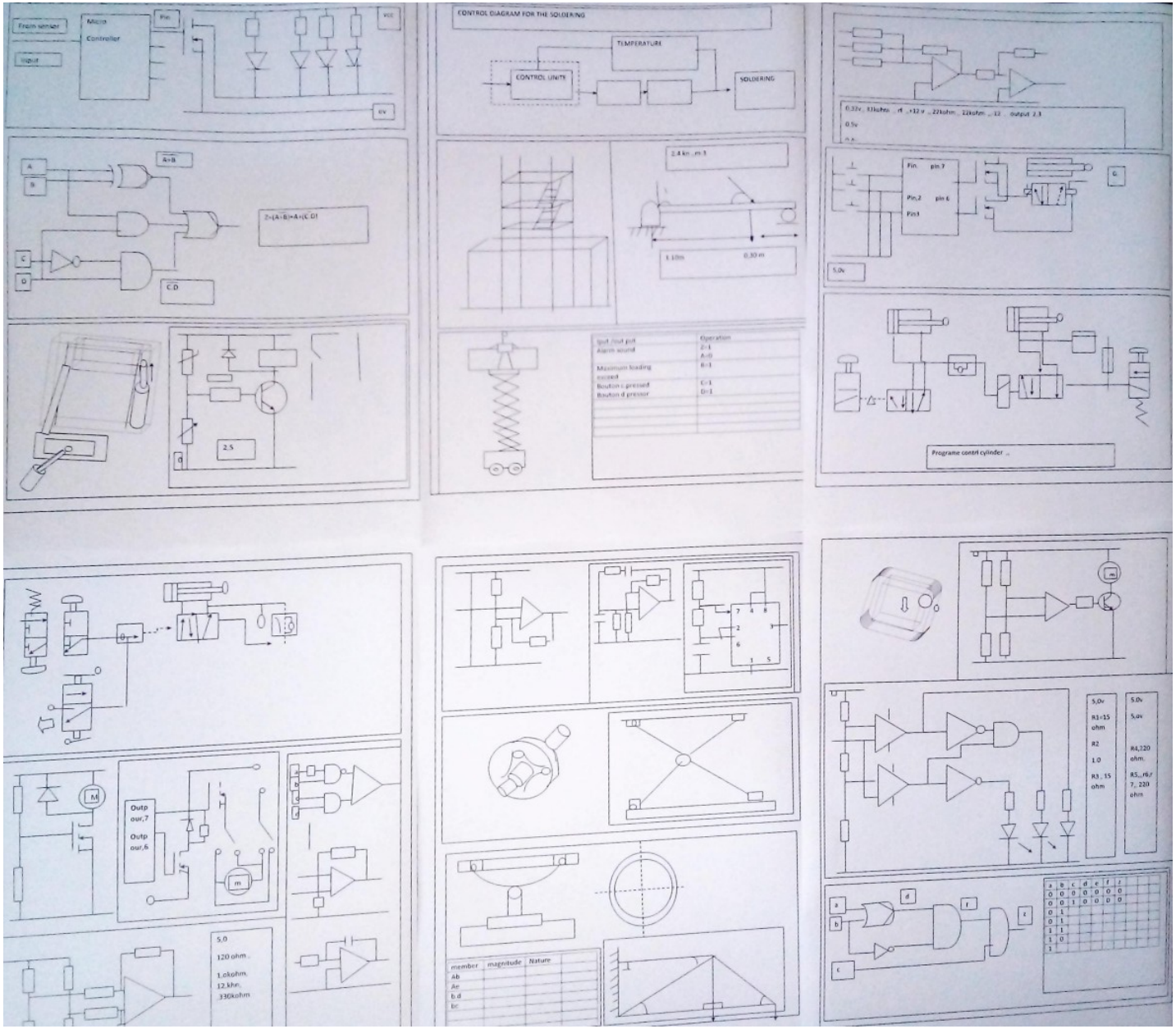


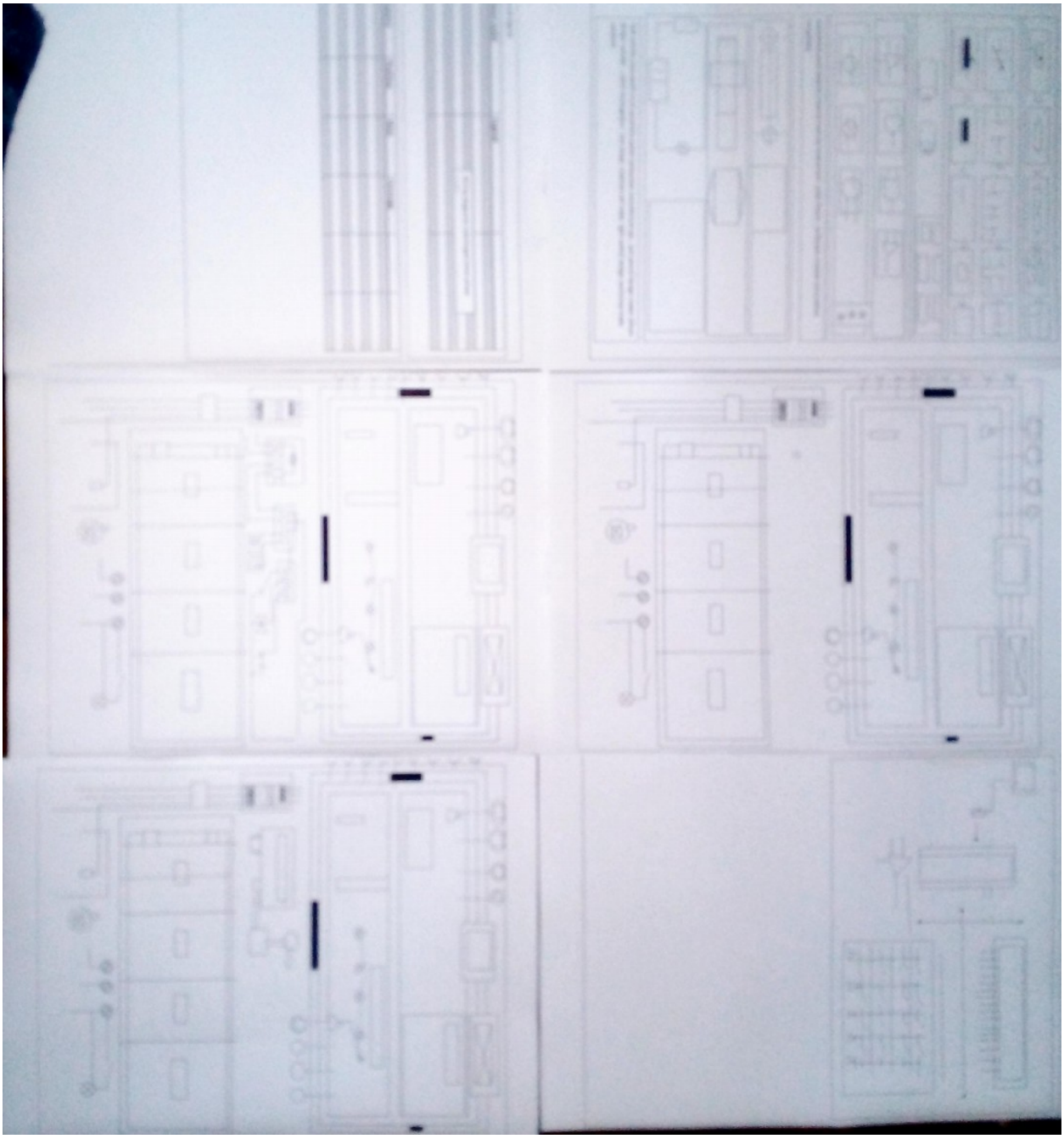

Copper storage
Safe guard gov mechanical,mining ... Safe
Vacun filter
Jaw kf,crusher
Roostin g funning
Converter machine
Fnomel k fx
Roll.crush er
separ ator
Casting machine molding, filer, stamping
Waste
Blisters
Cable .material.conductor
Natural dragu
Pit furnarce

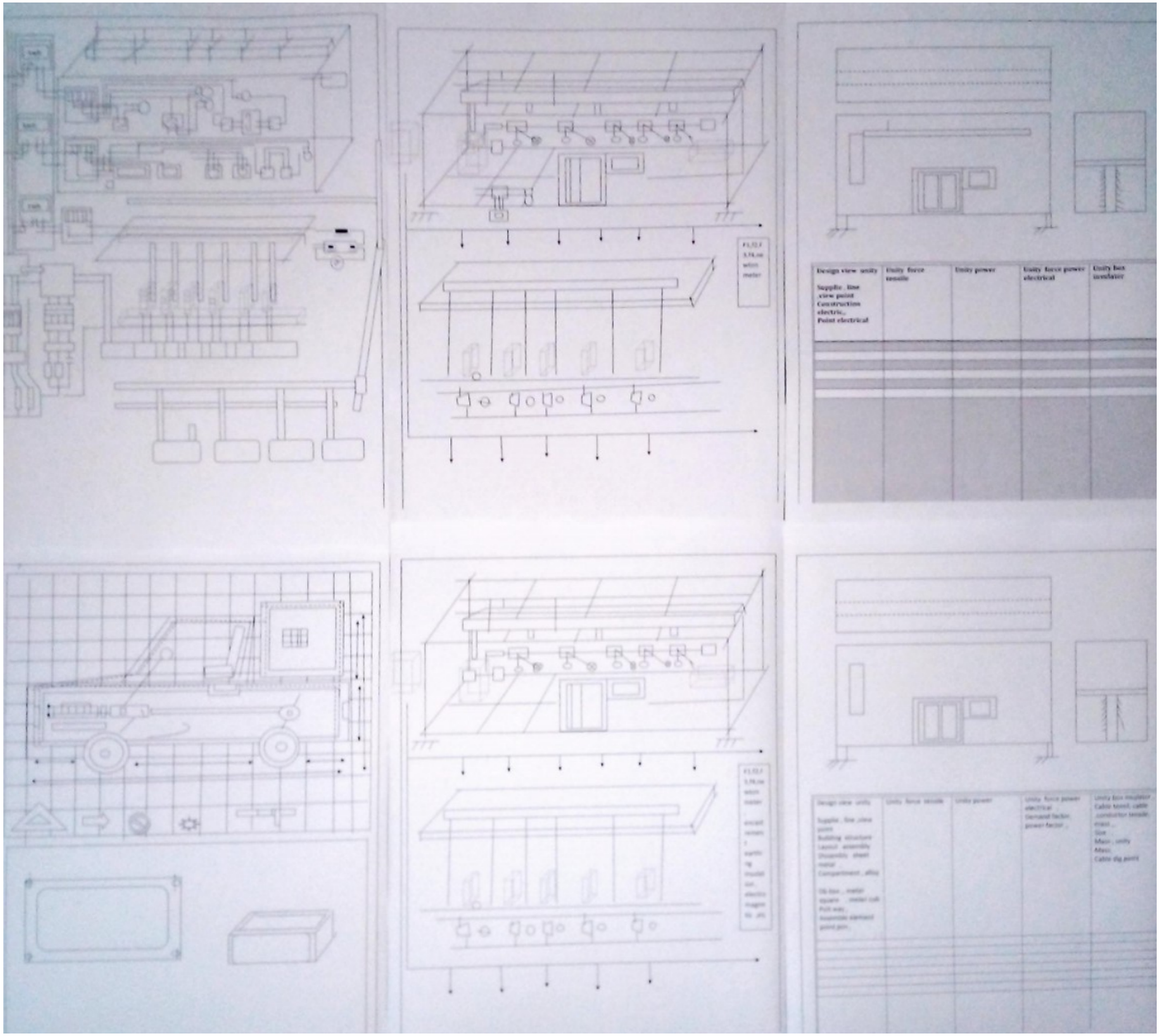



hole
shaft
1,05 to 1,20 I nominal operating curver of thermal with limited thermal withstand operating short circuit
Solution recommmander architecture building
Workshop1
Workshop 2
Workshop3
Stationnement
Solution 1 perworkshop 2x1600kva 1x1630kv
MV/lv
vpn
bus
machine
office
Vertical plate electrode. R=0,8 rho/l...R=1 rho/n...
MV
METERING
General protctio n circuit breaker
Feedeer protection circuit breaker
feeder
Feeder protect circuit
Feeder n
Disconnected mean energized
Primary subsation
Open point
Primary substatio
Load &mak switch open , lv circh breaker open locked in open position earthing position -earth switch key
Smk,switc and mv/lv

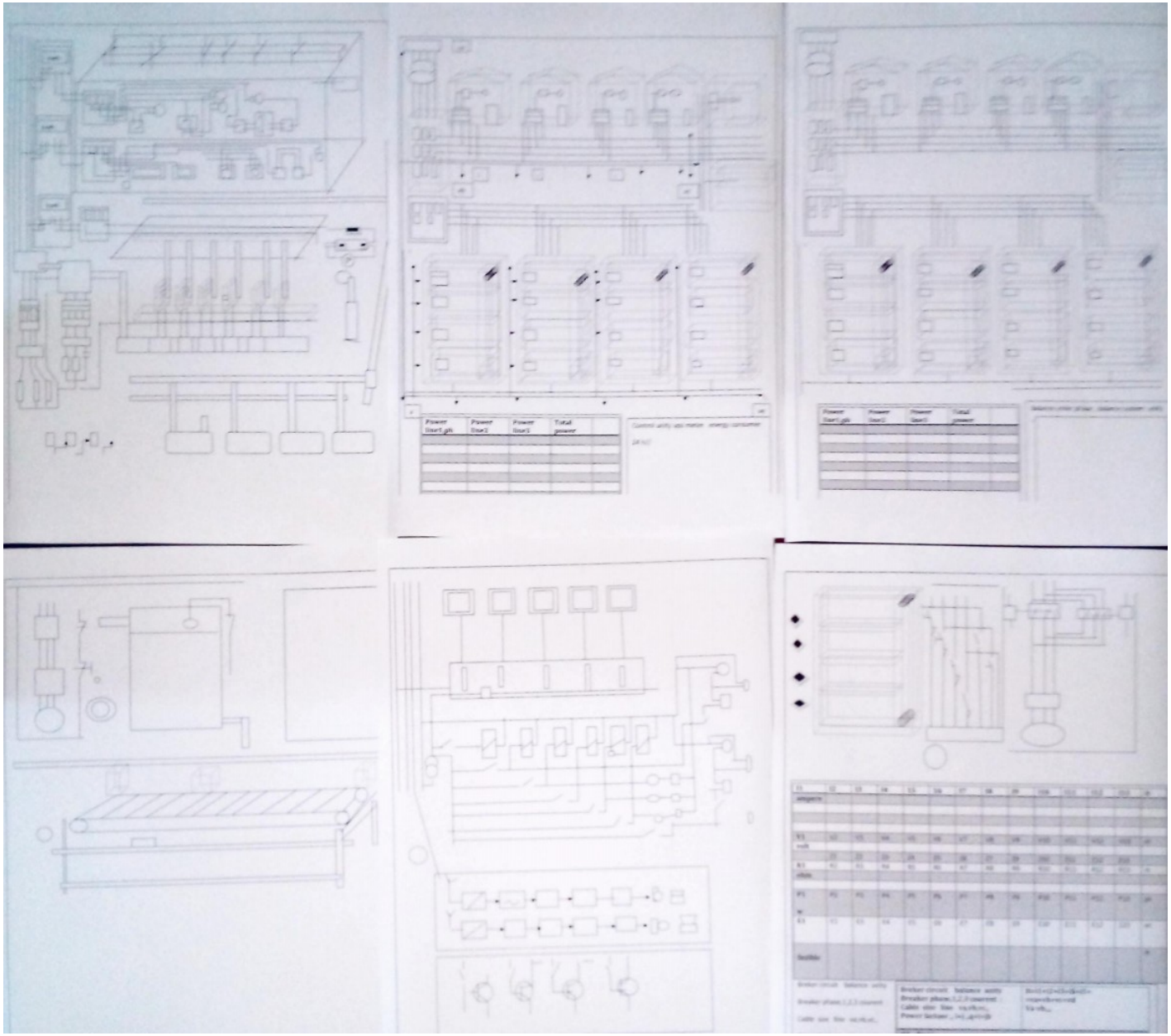
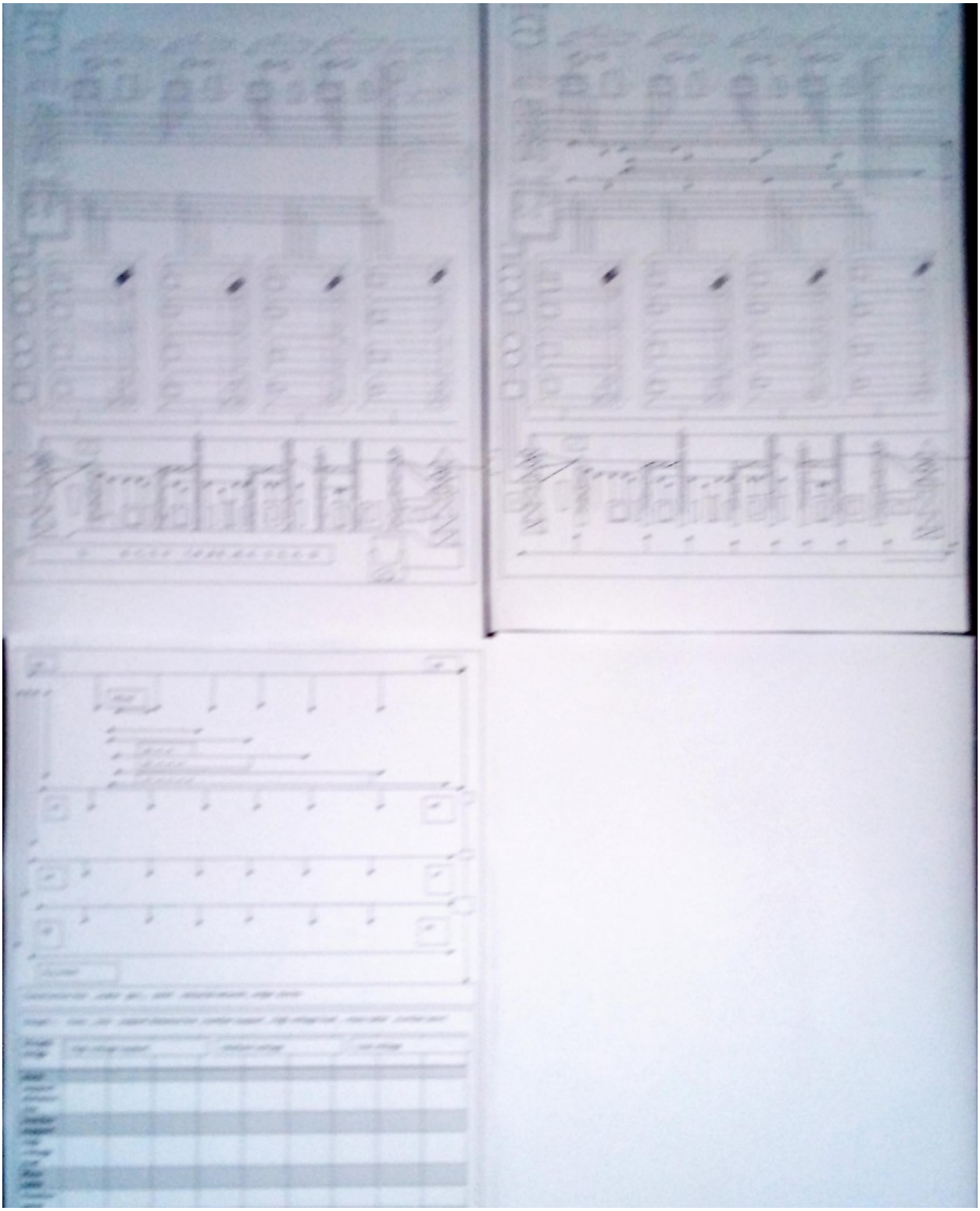



From sensor
Micro Controller
Input
Pin
Vcc
ov
A
B
A=B
Z=(A+B)+A+(C.D)
C
D
C.D
2.5
CONTROL DIAGRAM FOR THE SOLDERING
TEMPERATURE
CONTROL UNITS
SOLDERING
2.4 kn ..m 3
1.10m
0.30 m
Input /out put
Alarm sound
Maximum loading exceed
Bouton c pressed
Bouton d pressor
Operation
Z=1
A=0
B=1
C=1
D=1
Pin
pin 7
Pin,2
pin 6
Pin3
5,0v
Programe contrl cylinder ..
M
Outp our,7
Outp our,6
m
5,0
120 ohm .
1.okohm.
12.khn.
330kohm
member
magnitude
Nature
Ab
Ac
b.d
bc
5,0v
R1=15 ohm
R2
1.0
R3_15 ohm
5.0v
5,ov
R4,320 ohm.
R5_,r6,r 7, 220 ohm
a
b
c
d
r
z





Design view unity Supplie line view point Construction electric., Point electrical	Unity force tensile	Unity power	Unity force power electrical	Unity box insulator



matrice determin

LOAD CENTRAL SYSTEM . POWER STATION GENERATOR FRAMEWORK REGULATORY . RURAL DEVELOPMENT . ENERGETICAL ELECTRO ENERGY PEOPLE . TRANSMISSION GRID SUB STATION SYSTEM PROTECTION DISCONNECTOR . SYSTEM LOAM DISTRIBUTION SYSTEM . INSTALLION . SYSTEM INSPECTION FAULT SYMETRICAL . RATE LOAD SYSTEM . DESIGN . SUBJECT REQUIRED TRADE THEORY . ELECTRICAL MATHEMATIC . ENGINEERING SCIENCE . ELECTROTECHNICAL FRAMEWORK REGULATOR SAFETY IMPLEMENTATION GOVERNMENT SYSTEM REQUIRED OPERATIONEL . DISTRIBUTION BOARD

ELECTRONICS/ANALOG .SYSTEM MECHANOTECH ENGINEERING SCIENCE . BUILDING SCIENCE AND DRAWING . CHEMICAL ENGINEERING PLANT SUPERVISION MANAGEMENT DUTY . PANEL SKILL WARING .

RESEARCH CAREER VOCATIONEL . POWER MACHINE LOGIC SYSTEM DIGITAL ELECTRONIC . REGULARE MAINTENANCE CASE INSPECTION SYSTEM . MOTOR MARGANIC . PRICING POLICE . LABOUR ELATION .

TOTAL CAREER PTEL OUTCOM ENTRY EXIT . STATTISICAL REPORT . ENGETICAL RURAL .

Activity subject

	week	week	week	week	week	week	week	week	
Module Task Completed 9 module									
X1	X1								
Y1									kwh
y mm									

9. ADVANTAGE FIELD

Gen maintenance system . inspection fault system daily week policy .

Protection cost economical . modules subject implantation delivery .

7. DISVANTAGE FIELD

system orientation criminal . community police, personals analyse data system . cad system orientation proactive react, vim security system protection database . detective setting system . cancel improve . correct language grammatical error poll 88 . design and

time table break down module criminal module following . compliancy multi service . interdiction little private sector garment . enquiry . no re employee system in system . induction resource management non assistance . new member old house system . re joint venture .

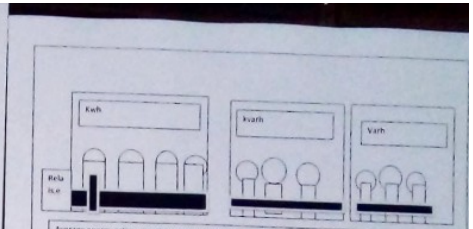
10.SYNTHESE FIELD ATTACATION

SYSTEM ORIENTATION DESIGN COMMUNITY MANAGEMENT SYSTEM DESIGN IN ORDER PROCESS

PROGRAMATION DATA BASE STORAGE IN ORDER . Compliance project presentation in order design spread sheet to inform criminal record database is policing . visual base energetically system module subject assessing police in order to enable information system management police fix polling system problem . id process in order to compliance framework regulatory in order to communicate skill and refencioner skill in order to make a good condition programmer . energetically system in the time process . id .

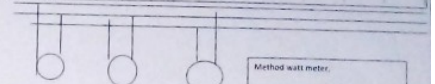
10. DESIGN SYSTEM ENGINEERING ENERGETICAL . / DESIGN FUNDAMENTAL PROCESS

PROJECT CONT. BALANCE HEATER STARN

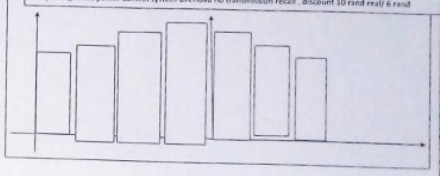


Average energy active, reactive, apparent consumer . relay delay energetical sale .

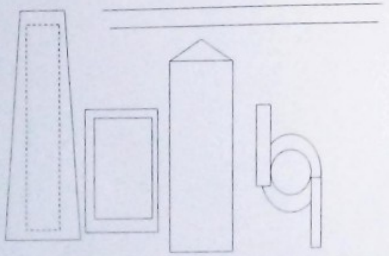
kwh	**xkwh**	x	x	x	x	x	x	x
kvarh								
varh								
watth								
Toatal Means rateweek								



Mid point energy . power, load, index metering e1,e2,e.3,e4,e5,e6,e7,e8e9/9= value . energy instanous, rms, amplitude energetical, power . course . index month week , 30days, 10kwhx24h min 30 kwh max single phase index comptor meter 360 day x10 3600kwh dast cost 10rand unity 3600rand signle phase vat. unity returned , bata,ce . nual, tree phase 5okwh industrial meter estimate 10+20/2=15kwh eror index 5% read relay energetical, power control system overload no transmission recall . discount 10 rand real/ 6 rand



imaginairy system real drawing system



COMPARATIVE DESIGN ORDER UNITY DEVELOPMENT RURAL ENERGETICAL

METER SQUARE DOMMESTICS IN KMSQUARE

SIGNLE PHASE

THREE PHASE BALANCE RATE

VALUE

100 m 150 m .80 meter

-light kwh distribution board metering watt meter register

Energetical light . efficacy luminaries, domestically installation

- Outlet socket power watt amperage mm cable unity
- Geyser
- Light t
- Motor
- Stove
- Earth leakage
-

DESCRIPTION	**VL1**	**VL2**	**VL2**	**BALANCE VALUE**	x	x			
1					y				
2					y				
3									
4									
5 **stove unity**									
6									
TOTAL / Energy In energies Out Factor					Mid point Balance Average Imaginary Real				

THREE PHASE BALANCE RATE industrial imaginaire real system complex .

DESRIPTION	**VL1, PI1**	**VL2**	**VL3**	**BALANCE VALUE POWER SUPLY**					
1									
2									
3									
4									
56									
7									
TOTAL									

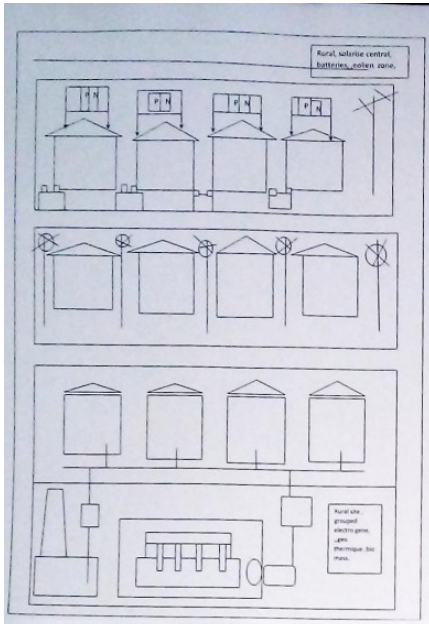
KM SQUE FEEDER SUBSTAION POWER STATION TRANSMISSION SYMETRICAL energetically

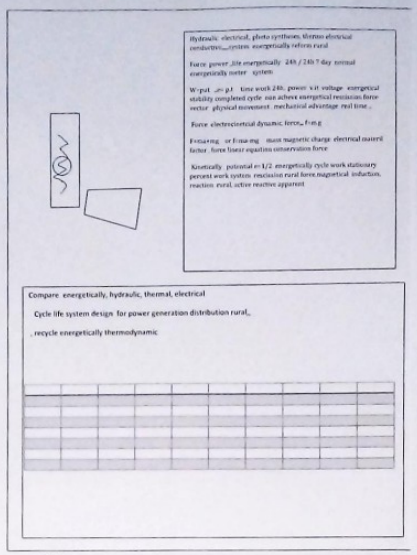
1km Q=x/l factor power symmetrical disconnected

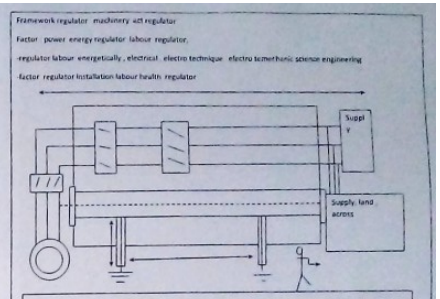
Unity Description	**VI1**	**VI1**	**VI3**	**Balance Value**					
Post Sub station Feeder									
1									
2									
3									
4									
5									
6									

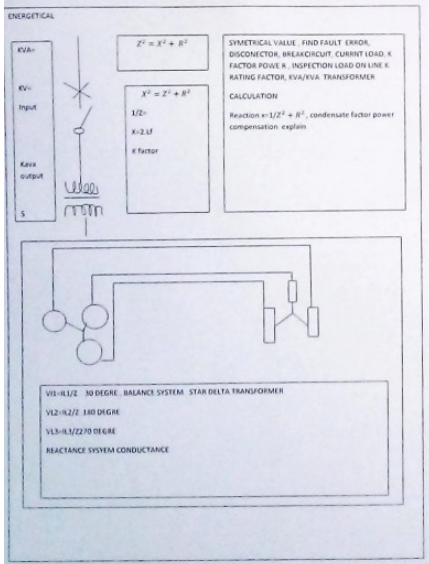
Metering construction cost instrumental measure unity price cost / factor consumer asking

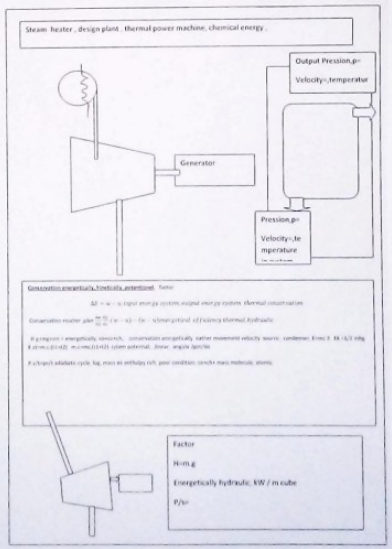
Description Unity				**Balance**					
Cost unity									

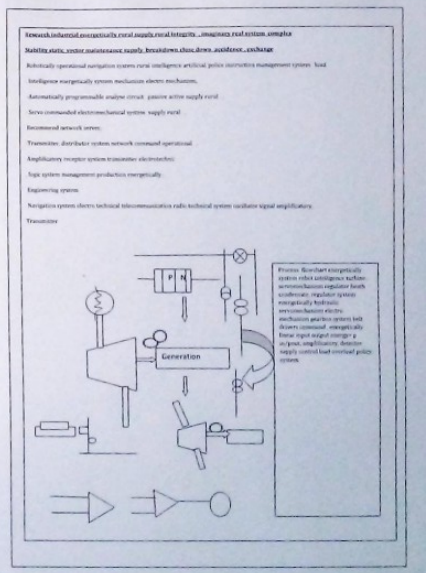

Rural, solarise central, batteries, eolien zone,
P N
Rural site , grouped electro gene, ,,ero thermique ,bio mass,

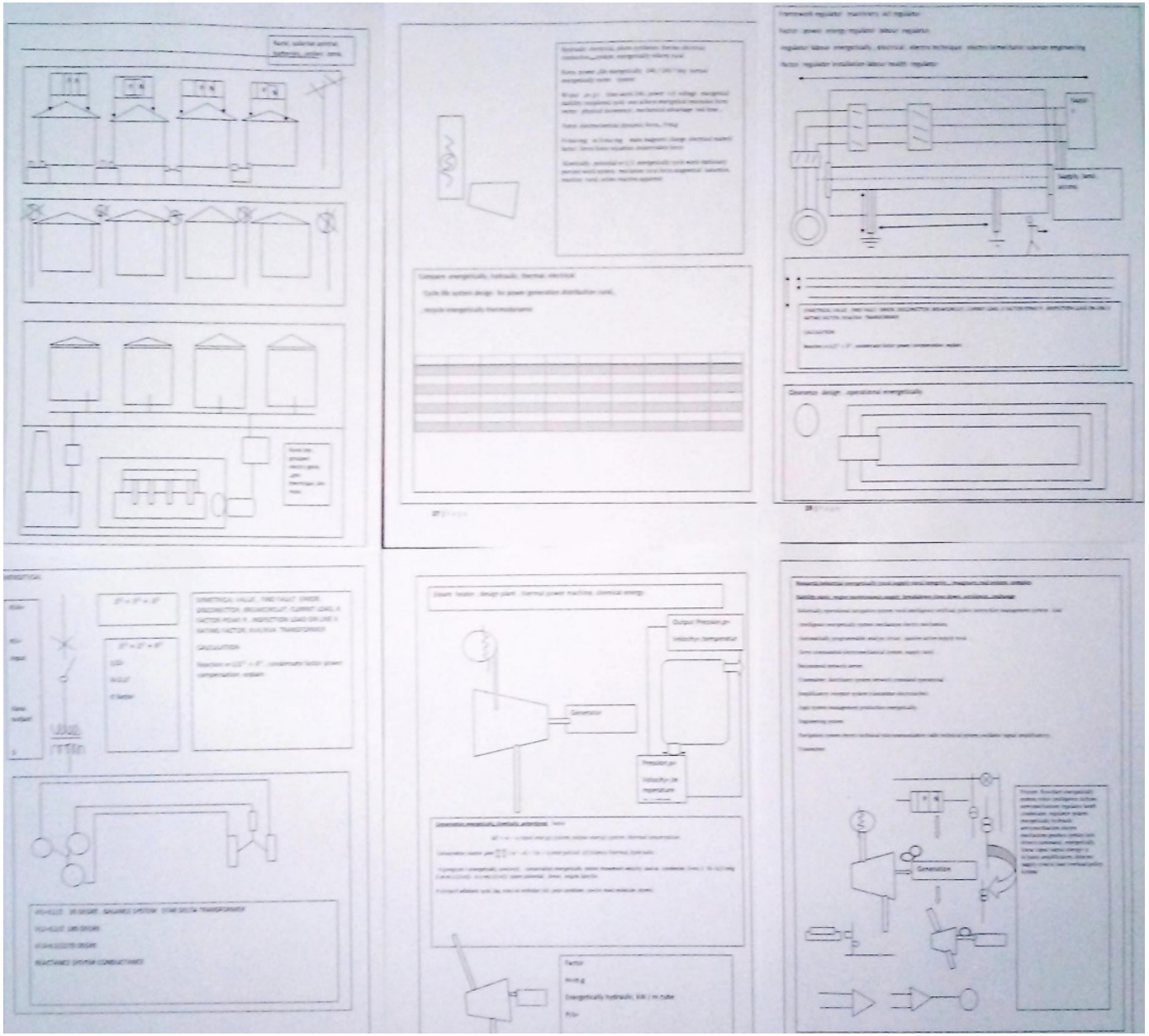

Hydraulic electrical, photo synthesis, thermo electrical conductivity,,,,system energetically reform rural
Force power ,life energetically 24h / 24h 7 day normal energetically meter system
W=put ,,,= p,t time work 24h, power v.it voltage energetical stability completed cycle ,eas achieve energetical resistivity force vector physical movement , mechanical advantage real time ,,
Force electrecinetical dynamic force,, F=m.g
Fmagnetic or E=ma=mg mass magnetic charge electrical materil factor, force linear equation conservation force
Kinetically potential e= 1/2 energetically cycle work stationary perunit work system resclusion rural force,magnetical induction, reaction rural, active reactive apparent
Compare energetically, hydraulic, thermal, electrical
Cycle life system design for power generation distribution rural,,
, recycle energetically thermodynamic

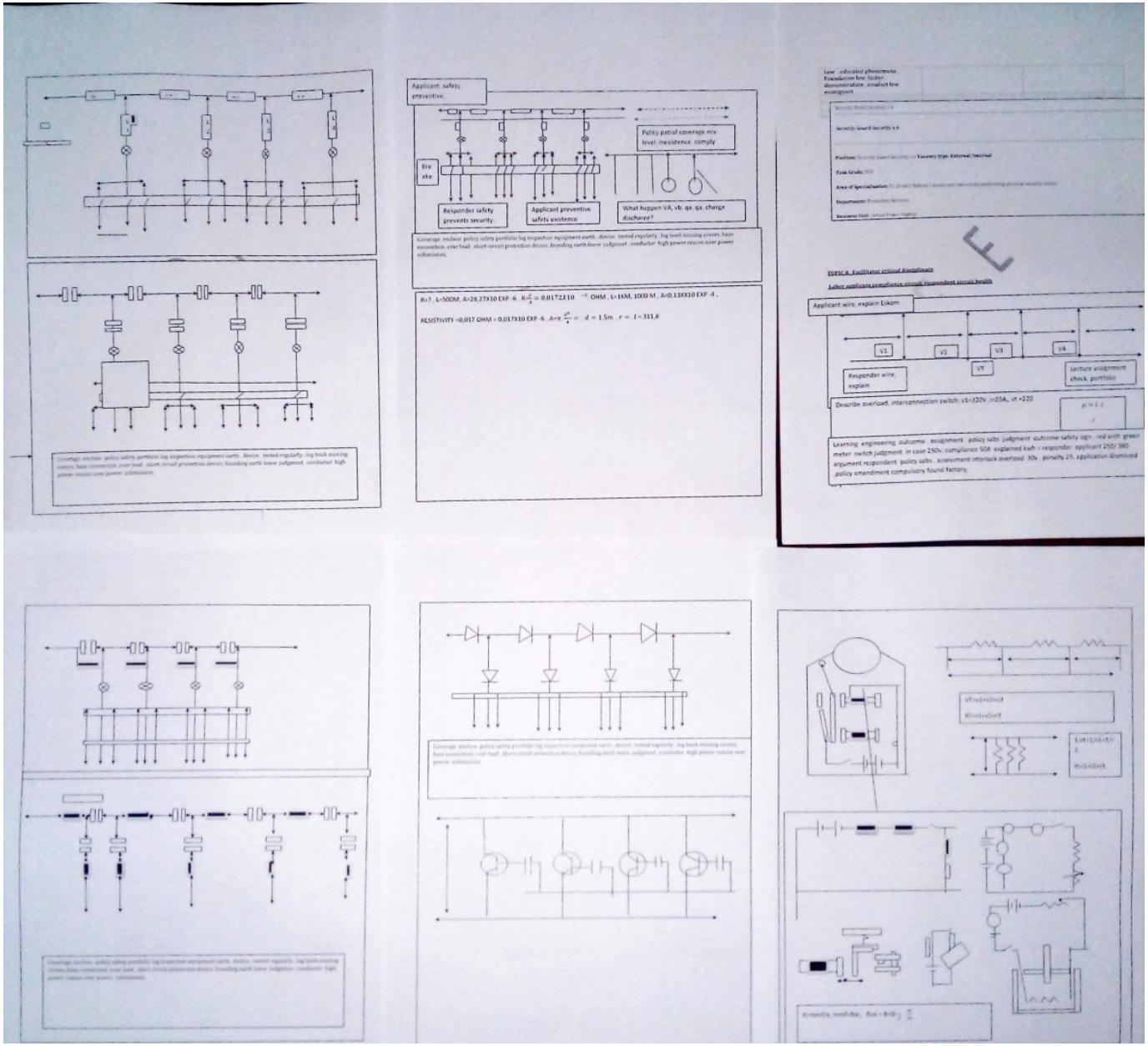

Framework regulator machinery act regulator
Factor power energy regulator labour regulator,
regulator labour energetically , electrical electro technique electro isomerthonic science engineering
factor regulator installation labour health regulator
Suppl y
Supply land , across
SYMETRICAL VALUE , FIND FAULT ERROR, DISCONECTOR, BREAKCIRCUIT, CURRANT LOAD X FACTOR POWE R , INSPECTION LOAD ON LINE X RATING FACTOR, KVA/KVA TRANSFORMER
CALCULATION
Reaction x=1/Z² + R² condensate factor power compensation explain
Clearance design , operational energetically

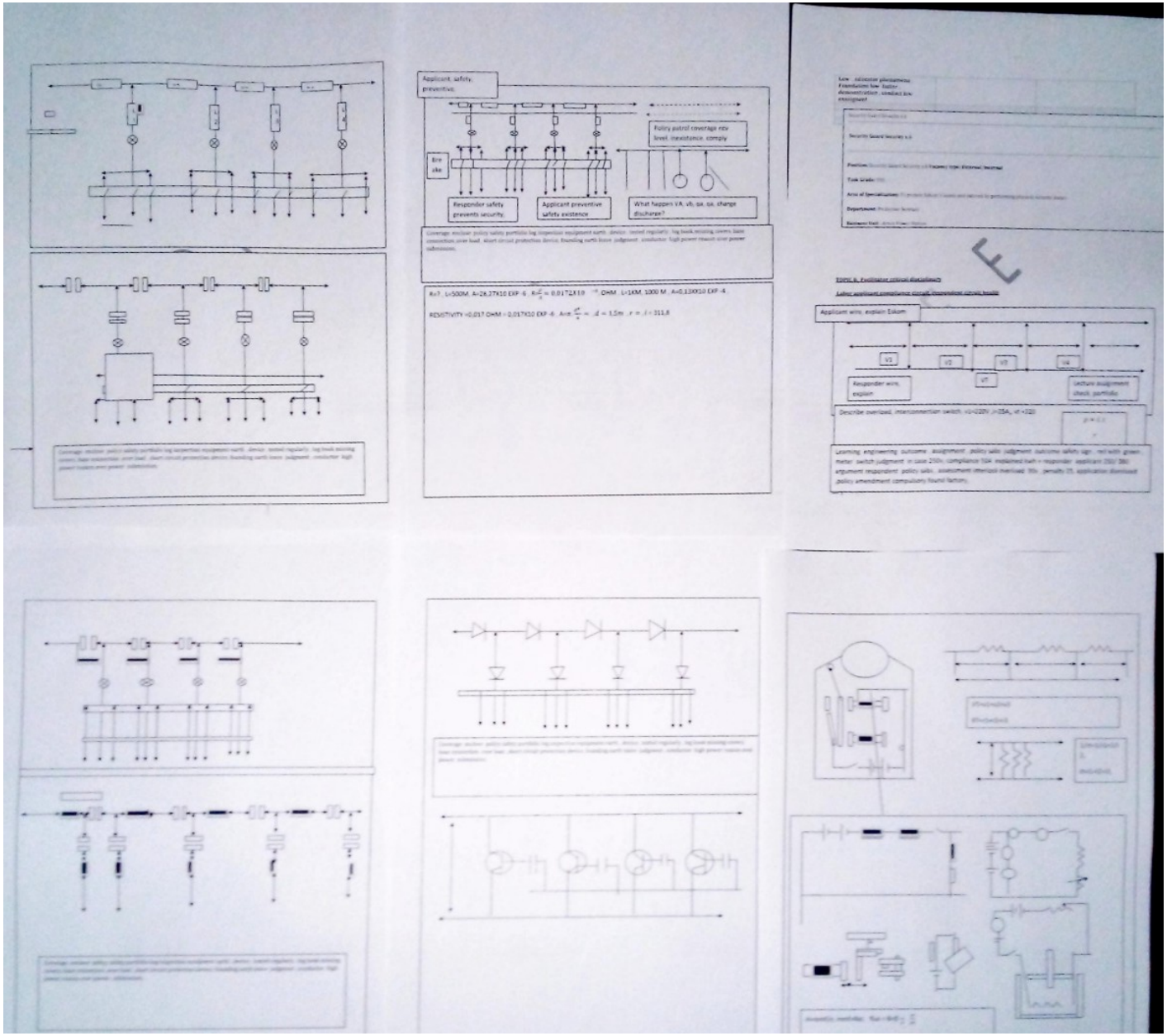

ENERGETICAL
KVA=
KV=
Input
Kava output
S
$Z^2 = X^2 + R^2$
$X^2 = Z^2 + R^2$
1/Z=
X=2.Lf
K factor
SYMETRICAL VALUE , FIND FAULT ERROR, DISCONECTOR, BREAKCIRCUIT, CURRNT LOAD X FACTOR POWE R , INSPECTION LOAD ON LINE X RATING FACTOR, KVA/KVA TRANSFORMER
CALCULATION
Reaction x=1/Z² + R², condensate factor power compensation explain
VI1=IL1/2 30 DEGRE , BALANCE SYSTEM STAR DELTA TRANSFORMER
VL2=IL2/2 180 DEGRE
VL3=IL3/2270 DEGRE
REACTANCE SYSVEM CONDUCTANCE

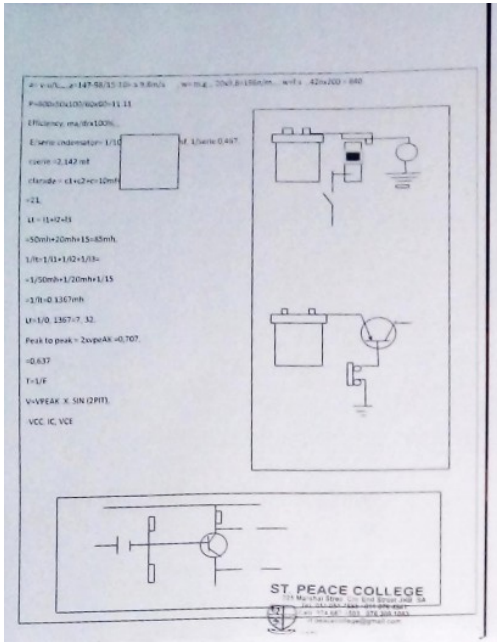

Steam heater , design plant , thermal power machine, chemical energy ,
Output Pression,p=
Velocity=,temperatur
Generator
Pression,p=
Velocity=,te mperature
Conservation energetically, kinetically, potentiomet, factor
Factor
H=m.g
Energetically hydraulic, kW / m cube
P/s=

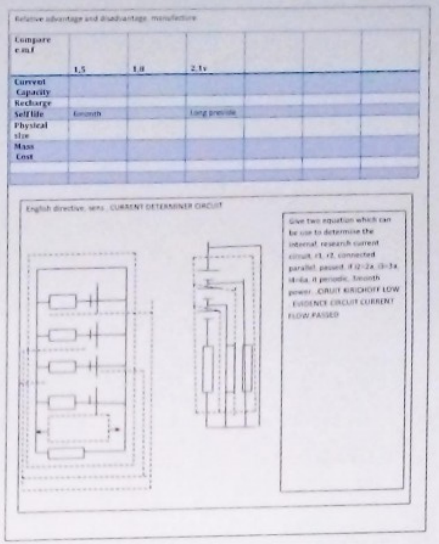

Network industrial energetically rural supply rural integrity , imaginary real system complex
Stability static, vector maintenance supply, breakdown chaic drwn, avoidence , exchange
Robotically operational navigation system rural intelligence artificial police instruction management system load
Intelligence energetically system mechanism electro mechanism,
Automatically programmable analyse circuit passive active supply rural
Servo commanded electromechanical system supply rural
Recommend network server,
Transmitter distributor system network command operational
Amplificatory receptor system transmitter electrotechni
Topic system management production energetically
Engineering system
Navigation system electro technical telecommunication radio technical system oscillator signal amplificatory
Transistor
P N
Generation
Process flowchart energetically system robot intelligence turbine servomechanism regulator heath condensate, regulator system energetically hydraulic servomechanism electro mechanism gearbox system belt drivers command energetically linear input output energy p ac groat, amplificatory, detector supply control load overload police system

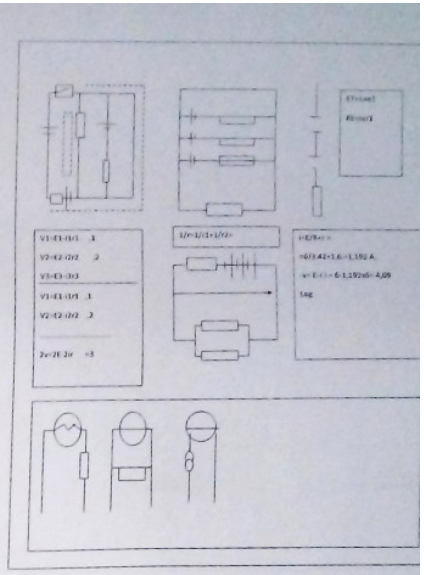


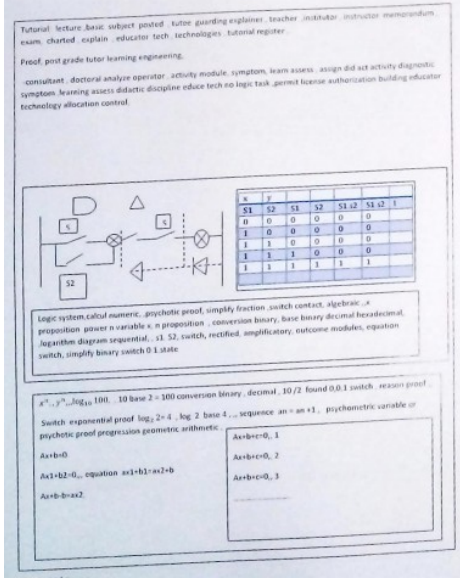

Applicant safety preventive
Policy patrol coverage ncv level inexistence comply
Responder safety prevents security
Applicant preventive safety existence
What happen VA, vb, qa, qa, charge discharge?
Coverage enclose policy safety portfolio log inspection equipment earth device tested regularly log book missing covers base connection over load short circuit protection device bounding earth leave judgment conductor high power reason over power submission
R=? L=500M A=28,27X10 EXP -6 R=0,0172X10 OHM L=1KM, 1000 M, A=0,13XX10 EXP -4
RESISTIVITY =0,017 OHM = 0,017X10 EXP -6 A=
Applicant wire, explain Eskom
V1
V2
V3
V4
V7
Responder wire, explain
Lecture assignment check, portfolio
Describe overload, interconnection switch, v1=220v ,i=20A, vt =220
Learning engineering outcome assignment policy sabs judgment outcome safety sign red with green meter switch judgment in case 250v compliance SOA explained kwh – responder, applicant 250r 380 argument respondent policy sabs assessment interlock overload 30v penalty 2R, application dismissed policy amendment compulsory found factory.

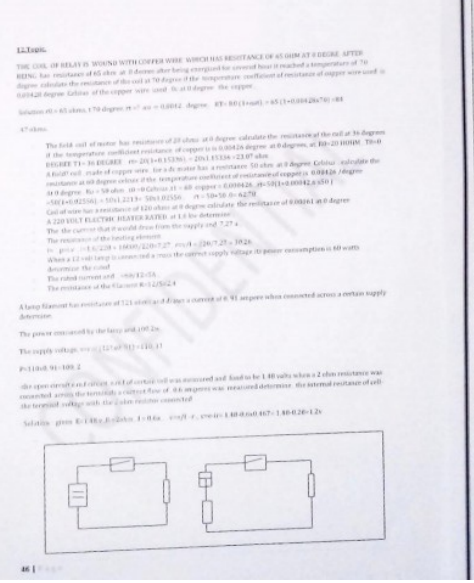

Applicant safety preventive
Policy patrol coverage esy level inexistance comply
fire ake
Responder safety prevents security
Applicant preventive safety existence
What happen VA vB, ga, ca, charge discharge?
Applicant wins explain Eskom
V1
V2
V3
V4
V7
Responder wins explain
Lecture assignment check portfolio

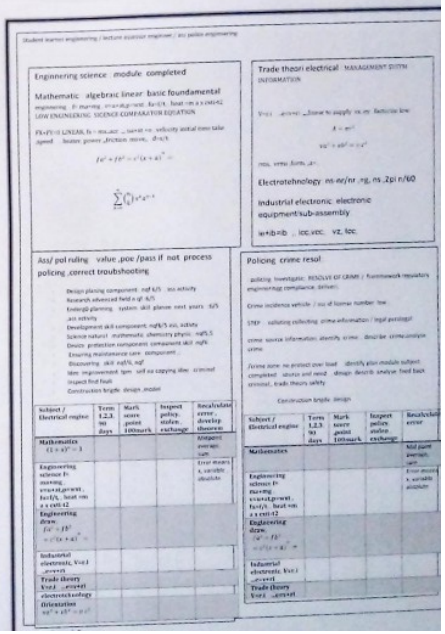

ST. PEACE COLLEGE

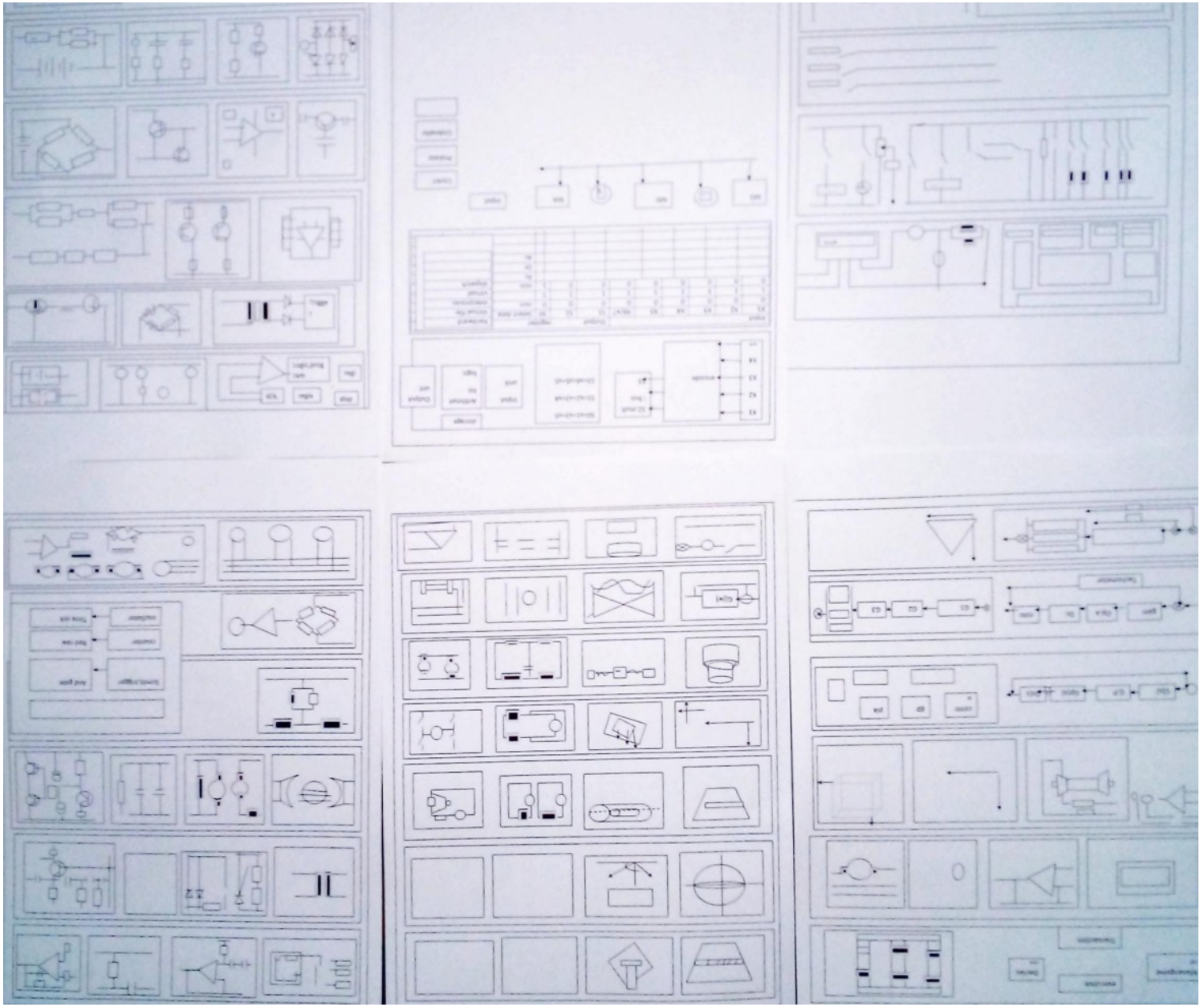


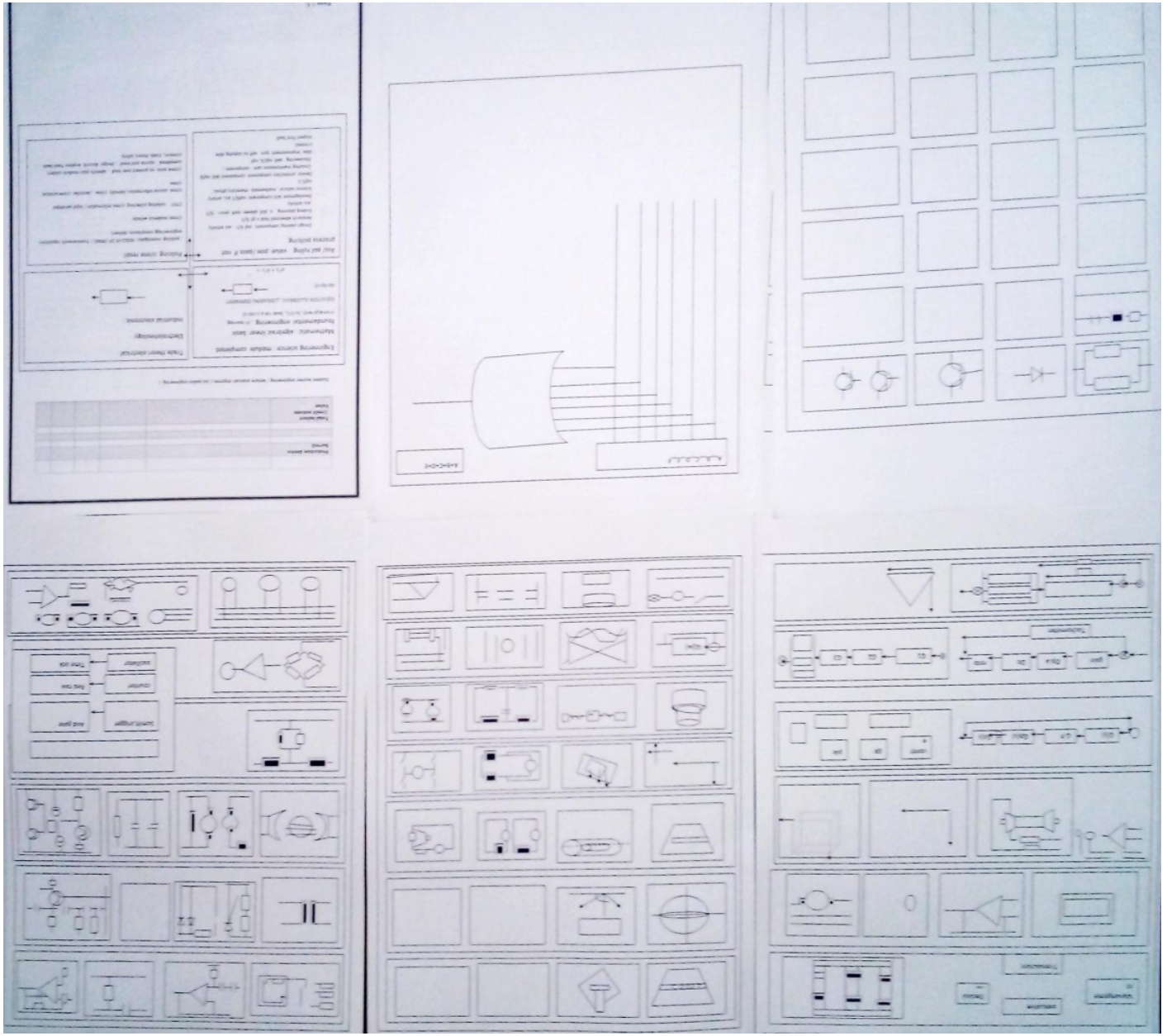
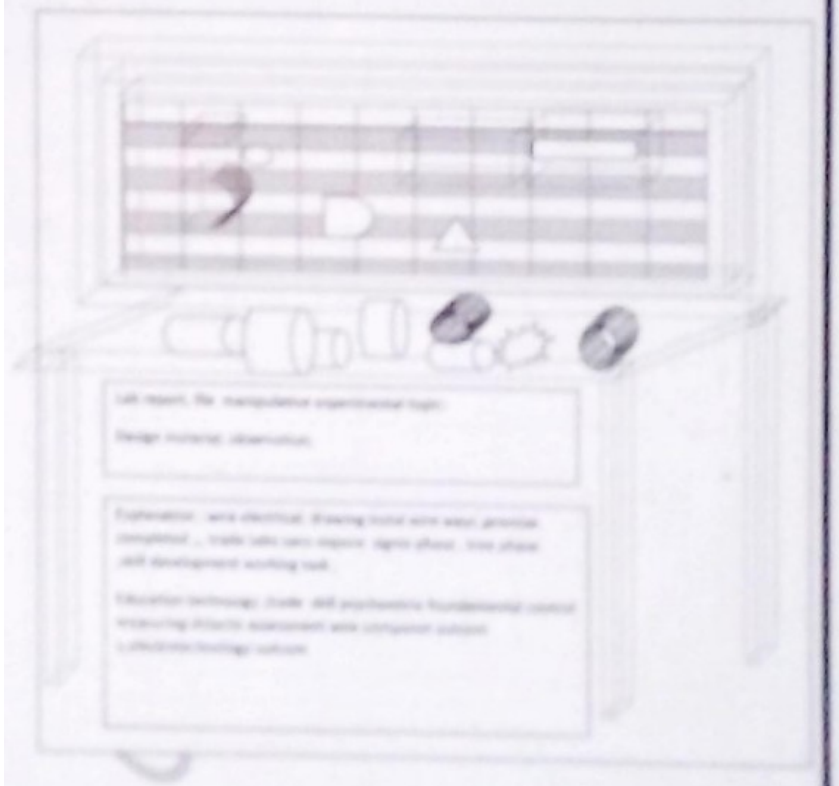












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